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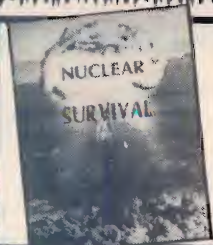


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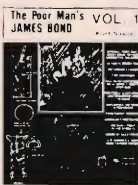
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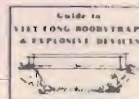
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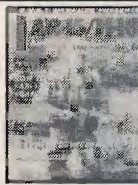
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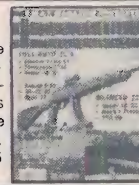
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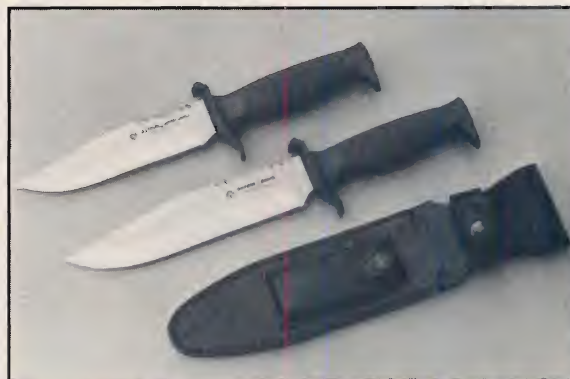
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AMERICAN SURVIVAL

The Magazine of Self Reliance

GUIDE

FEBRUARY 1992 VOLUME 14 NUMBER 2

COVER:

The new PM2 Italian-made 12 gauge magazine-fed pump-action shotgun. See page 24 (photo by Scott Stoddard).

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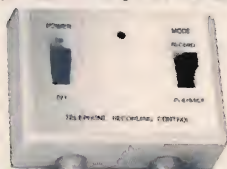
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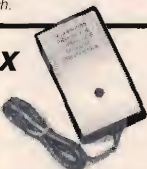
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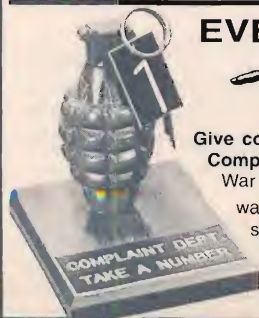
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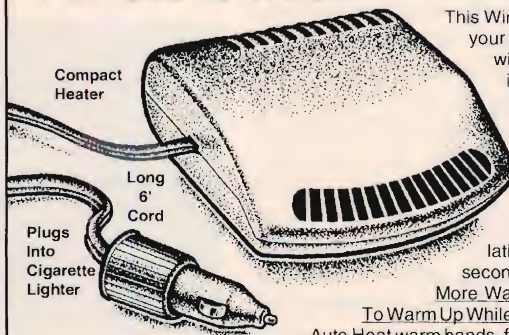
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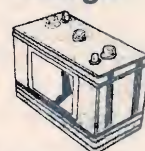
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IN last month's issue in this column, discussing the Killeen, Texas, massacre, I predicted there would be more such shootings. As of this writing there have been at least two more which have received national media attention.

One was the murder of several university faculty members in Iowa City, Iowa, by a disgruntled graduate student. The other was the murder of three people and the wounding of seven others, including the assailant, a fired postal worker, at the Royal Oak, Michigan, Post Office. This was the latest of nine such shootings at Post Offices in different parts of the country by postal workers dating back to 1983.

Their occurrence seems to be happening more frequently in recent years. These tragic and, for the people involved, terrifying events are also big media events, generating enormous attention and almost hysterical play in the press. Such crimes, of course, are perfect fodder for the gaudy sensationalism of our media. And they are excellent grist for the anti-gun-ownership movement, which has grown, with strong assistance from the media types, into a very powerful force to be reckoned with in our society today. With each new shooting the hue and cry goes out for gun control, gun control, gun control, the ultimate aim of which is the virtual disarmament of the American citizenry.

If just one person among the victims or potential victims of these mass shootings had a gun and the skill and will to use it, such a crime could be instantly stopped. And this would send a powerful message to other would-be assassins. But given the intense anti-firearm-ownership attitudes prevalent today, God forbid that anyone should even think of such a drastic measure as self defense!

Strangely, little if anything is ever said about what societal and psychological forces could be causing these highly disturbed individuals to behave as they do.

As I said, each time there is such a shooting, the media people and their cronies in government began clamoring for harsher gun control as the obvious solution to the problem. Donald Kaul, a columnist for *The Des Moines Register* in Iowa is typical. Referring, in his column "Over The Coffee" (Nov. 6, 1991) to the killings in Iowa City, Kaul declares, "The reason gun control is largely ineffective is that we don't have enough of it."

"To begin to deal with the lethal epidemic of guns in our society-you have

TO THE POINT

The phenomenon of mass shootings. . .



Illustration by Allan Koo

to begin not with the gun buyers but gun sellers," Kaul says. "There are said to be 250,000 licensed gun dealers in this country, or one for every 1,000 people. The licensing procedure begins where lax leaves off. This is why every nut case or hoodlum with the price can buy virtually any gun he wants to and as many as he wants."

But wait. There's more. In this same column we are treated to more pearls of wisdom from Mr. Kaul.

"We have a Congress that is totally in thrall of the gun lobby," he says. "Until this changes, there is no hope for effective control of guns. They have put a gun in the hands of virtually every criminal and lunatic in the country."

What few people realize, amid all this hysteria, is that these proposals are basically socialist. That is, the demand that government, big government, do something about the problem by controlling people and their possession of guns. The more control, the better.

Most of the people of this country are largely unaware of the place socialism and socialistic thinking plays in our mass media, universities and among some members of government today. "Gun control," namely the severe restriction and even elimination of firearms ownership called for by many of these people, goes hand in hand with socialism and socialist thinking.

Socialism is integral with how the media operates. Without big government to obediently respond to the demands and dictates of the media, the media loses its significance as a force in society.

I don't mean to diminish the terrible tragedy of these mass shootings for the victims or their friends and loved ones. But taken statistically, they are still rare occurrences for most of the population.

And, in fact, the overwhelming majority of gun owners, without question, are responsible and law-abiding

(Continued on page 9)

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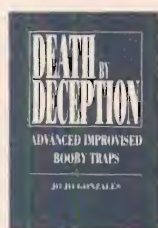


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Dramatic first-hand accounts of the results of handgun rounds fired into criminals by cops, storeowners, housewives, soldiers, cab drivers and a host of others are the heart and soul of this long-awaited book by firearms experts Evan Marshall and Ed Sanow. What sets this book apart from all other studies is the inclusion of these results from actual shooting incidents. This work has one goal: to provide accurate wound ballistics and ammunition information that police officers and civilians can use to survive lethal confrontations on the street. By combining case studies of actual shootings with scientifically controlled test firings into 10-percent ordnance gelatin, the authors have developed what may prove to be the definitive methodology for predicting the stopping power of any given handgun load. All other theories and formulas fade in comparison to this data – what really happens when a bullet meets a man. 8 1/2 x 11, hardcover, photos, illus., 240 pp. **\$39.95**



DEATH BY DECEPTION Advanced Improvised Booby Traps

by Jo Jo Gonzales

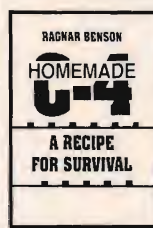
This sequel to the best-selling **Deathtrap!** reveals more about how terrorist IEDs are built from such seemingly innocuous objects as computer modems, shower heads, toilet-paper dispensers and traffic cones. Includes detailed instructions and schematic diagrams. For information purposes only. 5 1/2 x 8 1/2, softcover, illus., 120 pp. **\$14.00**



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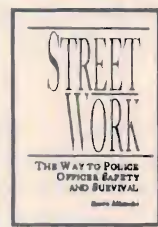
From the author of the best-selling **Anarchist Arsenal** series comes this comprehensive study of land mines. It includes instructions and illustrations for everything from the tiny DH-3 used by the VC to the massive Soviet MON-22, as well as claymores, frags, flying mines and much more. For information purposes only. 5 1/2 x 8 1/2, softcover, illus., 88 pp. **\$12.00**



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by Ragnar Benson

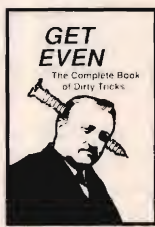
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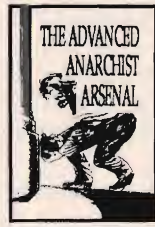
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SURVIVAL LINE

New Jerseyans follow Californians in mass disobedience of harsh assault weapon laws, Washington, D.C. voters want to hold assault weapon makers liable for crimes with the guns, short men at greater risk for heart attacks. . .

IN the April '91 edition of *American Survival Guide*, Survival Line reported that owners of assault weapons in California were overwhelmingly refusing to comply with that state's newly enacted assault rifle registration law. At that time only 19,000 of the estimated 300,000 assault weapons in California had been registered.

This ground swell of civil disobedience by otherwise law-abiding Californians now seems to have spread to New Jersey.

More than a year after the passage of the nation's toughest assault weapons law, New Jerseyans are, en-masse, simply refusing to comply with the law's provisions. The New Jersey law banned the sale or possession of assault rifles in the state as of May 1, 1990. Owners of assault weapons prior to that date were required to register their weapons or have them certified as inoperable by June 1, 1991. As of that date anyone found in possession of an unregistered assault weapon faces a jail term of three to five years and a fine of \$7,500. State police in New Jersey have estimated that there are between 100,000 to 300,000 assault weapons in the state.

To date less than 2,000 owners of assault rifles in New Jersey have complied with the registration or inoperability requirement. Another 4 weapons have been voluntarily surrendered to police by their owners, and 14 others have been confiscated by police when they were found during routine investigations such as traffic stops or as a result of anonymous tips to the police. State officials have reported 14 arrests (through August '91) for illegal possession of an assault weapon.

Assault Weapons 2 — For the second time in two years, Washington, D.C. has attempted to solve its burgeoning homicide rate with a law that holds manufacturers and retailers of assault weapons financially liable for any inju-

ries caused by criminals who use assault weapons during the commission of crimes.

This time the assault weapons liability law was passed by voter referendum in the most recent elections. Even the law's supporters voice doubts as to its constitutionality. Opponents of the law note that possession and sale of assault weapons in the District is already illegal.

The Long And The Short — Bad news for short men. A new Harvard Medical School study has found that shorter men, (5 feet 7 inches and under), have a 60 percent greater risk of developing a first heart attack than men 6 feet 1 inch and taller. The study was conducted over a five year period and involved more than 22,000 male physicians who were monitored during that time.

Dr. Patricia Herbert who headed the study noted that over the duration of the study there was a continual correlation of height and heart attack risk. "Over the five-year period of the study, for every added inch of height there was a 3 percent decrease in the risk of heart attack," said Dr. Herbert. Height was found to be a risk factor independent of other risk factors such as cholesterol level, smoking, and age.

Height is an apparent factor in heart attack because short men have narrower coronary arteries than do tall men. Narrow coronary arteries are more vulnerable to atherosclerosis, the buildup of fatty deposits in the arteries. Atherosclerosis limits the blood flow to the heart and is one of the leading causes of heart attacks.

Though nothing can be done about the size of arteries, the report's authors advise shorter men to reduce their risks of heart attack by exercising regularly, lowering their cholesterol and blood pressure levels, and quitting smoking. ●

TO THE POINT

(Continued from page 6)

and never commit crimes with their guns. Why then, is there such a mass hysteria and large movement in this country for ever more restrictive gun control and bans on guns?

Mass murders committed with other instruments don't get anywhere near the media attention as do such killings with guns. Take for example the woman in Reno, Nevada, who killed and injured about as many people by driving her car into a crowd as did the psychopath Patrick Purdy with his semiautomatic Kalashnikov rifle in Stockton, California. She was sentenced to death for her crime, by the way. And then there was the worst mass killing in the nation's history in which something like 87 people were killed in an arson fire in an illegal New York City social club a few years ago. It was set by an immigrant with gasoline and matches.

All the murders with firearms combined in this country every year still amount to only about the same or less than the number of people who die from acute alcohol poisoning (drinking too much alcohol at one time). I've read there are about 20,000 acute alcohol poisoning deaths annually in the U.S.

Including drunk driving accidents, there are some 45,000 deaths in vehicular mishaps every year in America—at least twice the number of deaths from firearms murders.

Then there're tobacco-related illnesses and deaths... Sure. People are calling for greater restrictions on some of these items. But you won't see the gun control devotees calling for heavily restricting drivers licenses or outright bans on alcohol—an outright ban on alcohol was tried earlier in this century in this country, as most of you know, and was a disaster, and was ultimately repealed.

Why then, aren't the gun control gurus demanding that we severely restrict and even ban possession and use of such things as tobacco, alcohol and fast cars? If their real interest is in saving lives, why don't these people demand the severe restrictions and bans on the items I've listed?

Why, indeed? This is something the public needs to ask of the gun prohibition fanatics, and to consider when next they hear/see the hysterical calls for ever more restrictive "gun control"

— Jim Benson.

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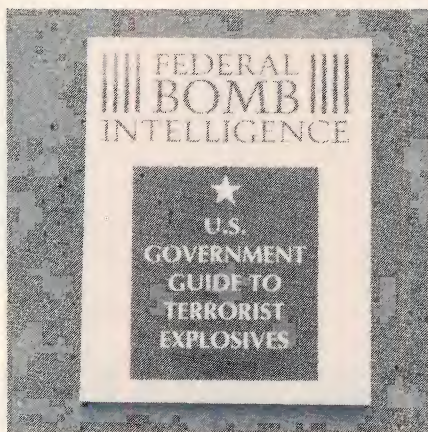
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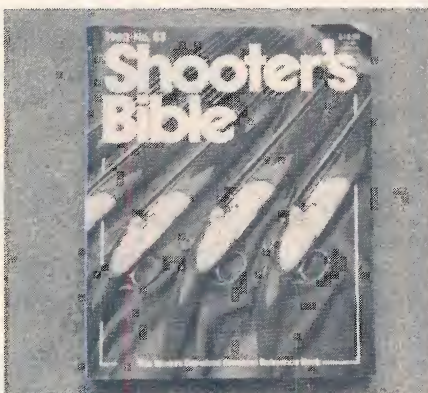
BOOKS/VIDEOS



Federal Bomb Intelligence, U.S. Government Guide to Terrorist Explosives. Paladin Press, P.O. Box 1307, Dept. ASG, Boulder, CO 80306; (800) 392-2400. Softcover, 160 pages. \$20 plus \$4 shipping and handling.

Would you like to know what the U.S. government knows about terrorist explosives? This book represents 35 of the most notorious, sophisticated, or effective improvised explosive devices that have actually been built or used

around the world. The information contained in these bulletins has been circulated to EOD specialists and counterterrorism experts within the government who are tasked with monitoring and/or preventing the use of bombs against the U.S. government, its citizens, or its property. Detailed, nontechnical information and schematics show exactly how each device was constructed. In cases where the bombs were used, the reports describe how they were detonated and their impact. Instructions or suggestions for detection and defusion also accompany some devices. Highlights include the Lake Tahoe bomb (a 1,000-pound, super-sophisticated bomb with 34 switches and leveling bubbles for stability); electronic delay circuits; short-duration timers; package bombs received by U.S. embassies; the latest car bombs used in Canada, Puerto Rico, and elsewhere; booby-trapped flight bags; solid-state timing devices; and much, much more. A lot of the information presented in this book has never been seen outside restricted circles.



1992 Shooter's Bible, Stoen Publishing Company, 55 Ruta Court, Dept. ASG, South Hackensack, NJ 07606; (800) 631-0722. Softcover, 576 pages. \$18.95.

The Shooter's Bible provides the most complete information available in the marketplace today for the specifications and retail prices of virtually every shotgun, rifle and handgun currently manufactured. The firearm information is supplemented with articles of lasting interest, sections on sights, scopes, reloading equipment, ballistics, black powder, manufacturer's directory and countless other facts of interest to the reader. For example, the "Caliber-finder" feature lists the manufacturer and model by caliber so that the reader can tell at a glance what is available in any caliber firearm that may be of interest. A great tool for learning what is in the marketplace.



Hapkido: The Integrated Fighting Art, by Robert K. Spear. Universal Force Dynamics, 410 Delaware, Dept. ASG, Leavenworth, KS 66048; Softcover 186 pages. \$12.95 plus \$3 shipping and handling.

Hapkido, the "way of coordinated power," is a total martial art, encompassing the striking and kicking aspects of Korean karate with the throw-

ing, joint-locking, and breaking aspects of jiu-jitsu. Internationally respected self defense expert, Robert K. Spear, tells it all. Considered one of the most complex martial arts, Hapkido is a form of scientific street fighting with more kicks than Taekwondo and the use of weapons such as the common walking cane and short clubs.



Wilderness Survival, tape #1, a video produced by the World Survival Institute, Box 394, Dept. ASG, Tbk, AK 99780; (907) 883-4243. VHS, 60 minutes. \$49.95 plus \$3 shipping.

This is the first of a four tape series on wilderness survival skills. Filmed in the scenic wilderness of Alaska, tape #1 deals with emergency shelters and firebuilding. Hypothermia can be a major problem when stranded out in the woods. If you can't take cover and get warm in a reasonable period of time, the cold and the wet might claim your life. Chris Janowsky, founder of the World Survival Institute, is a former Special Forces Vietnam vet and shows you how to survive in difficult situations. You'll learn how to build a snow cave even when there's only a few inches of snow on the ground. Several types of lean-to shelters are demonstrated including the techniques for lashing the poles together and how to make the shelter watertight. The video shows the viewer a simple way to generate water in winter without a pan to melt snow. The firebuilding section shows you how to find good tinder and kindling materials and then how to spark a fire into life using flint and steel. A 90 minute preview tape is available of all the Institute's videos for \$10. Upon ordering your first tape, this \$10 is fully refunded.

(Continued on page 43)

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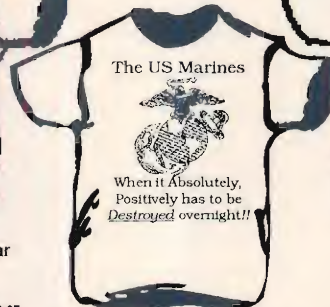
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This 27-inch Bomber features a nylon flight sateen shell, two-way pockets, large fur collar, nylon quilted lining with 100 percent polyester fill. Completely machine washable, the jacket comes with a heavy duty zipper, zippered sleeve pocket and heavy knit waistband and wristlets. Available sizes include S,M, L, XL, 2XL and 3XL. Price is \$29.95 plus \$3 shipping and handling. Major Surplus and Survival, 435 W. Alondra, Dept. ASG, Gardena, CA 90248; (213) 324-8855 or (800) 441-8855.

has been absent from the Springfield line for three years. Its return means that campers, boaters, private pilots, backpackers and young shooters will once again have access to an affordable, compact and versatile companion firearm that does double duty as a single shot .22 rimfire and a very capable .410 shotgun. Designed after the U.S. Air Force's M6 survival rifle, the M6 is a single shot, breech loading .22 over and .410 under, both 18-inch barrels. It weighs just 3½ pounds and folds in half or completely breaks down into two easily stored sections. The M6 buttstock provides storage for 14 extra .22 rounds and four .410 shells. Suggested retail price is \$249. Contact: Springfield Armory, 420 West Main Street, Dept. ASG, Geneseo, IL 61254; (309) 944-5631.





Ek "Pig Sticker" Knife

The Ek Commando Knife Company

is proud to announce the re-introduction of the "Pig Sticker" knife of World

War II fame. The knife's unusual name comes from the fact that it was originally manufactured during the 1940s for sticking cattle. But, because of its efficient design, simple construction, light weight and inherent affordability, it quickly became one of the most popular fighting/utility knives among American troops. The knife is 11 inches overall with a six inch blade length. It's made of bead-blasted high-carbon stainless steel with a Rockwell C57 hardness. Grips are made of Maple wood with three brass rivets. The Pig Sticker comes with a deluxe "reproduction" brown leather sheath and sells for a suggested retail price of \$69. Contact Ek Commando Knife Company, 601 North Lombardy Street, Dept. ASG, Richmond, VA 23220; (800) 468-5575.



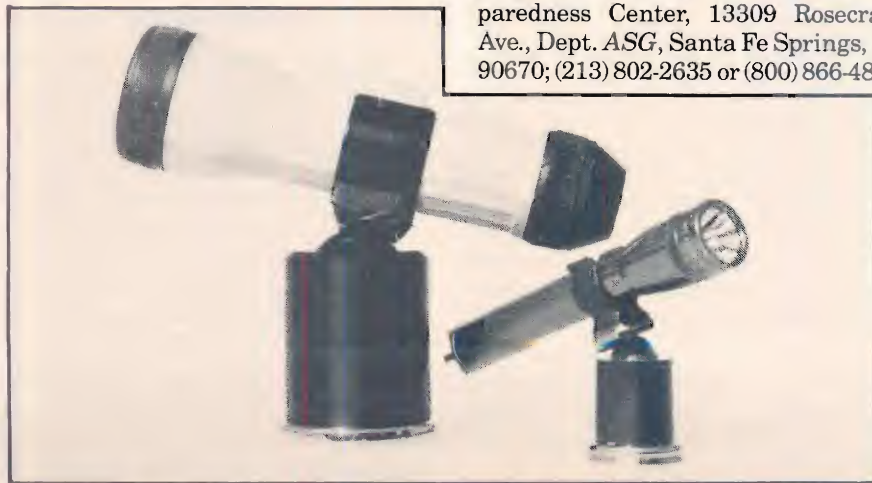
Adjustable Magnetic Flashlight Holder

Wild Bill's Hands Free flashlight holder is designed with the mechanic in mind. It's also useful in home or shop and rotates 360 degrees and 70 degrees parallel to the surface plane. Made of high impact plastic with a powerful magnetic base. Aim your flashlight exactly where you want it, leaving your hands free to work. Mini "AA" battery size sells for \$9.95. "D" size sells for \$19.95. Contact: Solve-It! Mfg. Company, P.O. Box 7291, Dept. ASG, Redlands, CA 92375-0291; (714) 792-6536.



72 Hour Life Kit

This survival kit is ideal for car or patrol vehicle: the dual-zippered bag is bright international orange and is padded to protect the inside contents. The bag measures 10" x 6½" x 5" and is made of heavy duty 11½ ounce Cordura nylon with an inside waterproof polyurethane lining. A quick release strap can be adjusted for shoulder carry. Contents include: 6 Aqua Blox water rations, 8.45 fl. ounces each; 1—2400-calorie food ration with five year shelf life; 3—12-hour instant light sticks; 4 wet wipes; 2 sanitation bags; mini pen-light; first aid unit; and an emergency space blanket. \$39.95 plus \$6.95 shipping and handling. NITRO-PAK Preparedness Center, 13309 Rosecrans Ave., Dept. ASG, Santa Fe Springs, CA 90670; (213) 802-2635 or (800) 866-4876.

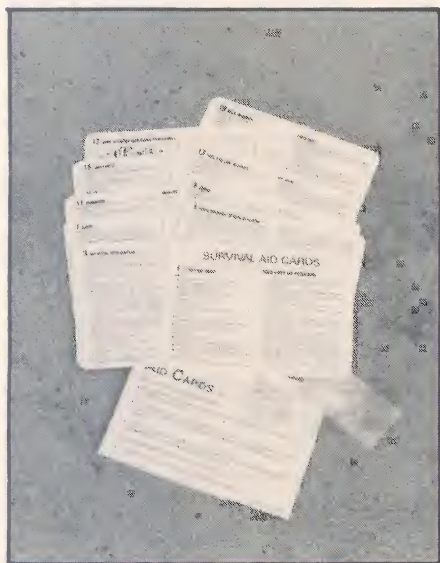


NEW PRODUCTS



Emergency Candle

The Emergency Candle by MPI is a high-melt-point wax candle in a 2½ inch high by 3½ inches round ring-top opening sealed can that also contains a package of damp proof matches sealed inside. The addition of the matches will insure that non-smokers or others will have an available means of lighting the candle to provide needed warmth, light and the ability to cook or signal for help. The Emergency Candle will provide 300 BTU/Hour for up to 22 hours and can be extinguished and stored for future use by using the resealable lid. Suggested retail price will be about \$5. Contact MPI Outdoor Safety Products, 37 East Street, Dept. ASG, Winchester, MA 01890-1198; (800) 343-5827 or (617) 729-8300.



Survival Aid Cards

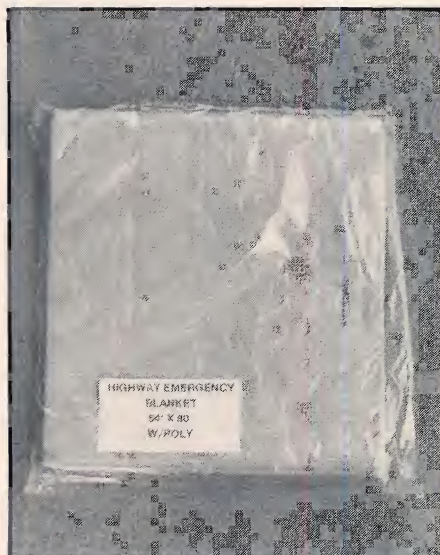
This basic set of 10 durable, washable vinyl cards provides concise how-to information for medical emergencies. Also included is a fresnel magnifier lens which can be used to find a splinter, start a fire or permit those who wear eyeglasses to use these cards if glasses are lost or broken. The simple instructions and illustrations on the cards provide steps for handling emergency situations based on current recommended practices. An ideal addition to any first aid or emergency kit. Retail price is \$9.50 plus \$2 shipping and handling. The Survival Center, Box 234, Dept. ASG, McKenna, WA 98558; (800) 321-2900.



Recon Scout

Cold Steel is offering through their Special Projects division, the Recon Scout, a very reasonably priced combat knife made of Carbon V steel. The Recon Scout has a broad clip point that is highly resistant to bending or breaking. The blade-back is equipped with a slightly concave false edge that measures approximately 3½ inches long. The total blade length is 7½ inches long with a curved flat ground blade that is razor sharp and capable of shaving hair. The weight of the knife is 15 ounces and is balanced approximately ½ inch in front of the

guard for a slightly blade heavy feel. To prevent rust, the blade is coated with a deep black epoxy finish that is baked on for years of rugged service. The handle is 5 inches long, made of Kraton rubber, deeply checkered for a non-slip grip. Every Recon Scout comes with an extra heavy, black cordura sheath complete with a sturdy tie-down cord. Its belt loop will easily accommodate any belt, including a G.I. pistol belt. Price is \$129.95, or two for \$225 (\$112.50 each), or three for \$300 (\$100 each). To order, contact Special Projects at (800) 255-4922.



Highway Emergency Blanket

Used by police and fire departments. These bright yellow emergency blankets measure 54 x 80 inches and are disposable. Made with a waterproof vinyl plastic outer layer bonded to a two layer paper inner warmth liner.



North Face Experimental Sleeping Bag

These intermediate-cold sleeping bags were made by North Face for the U.S. military and resemble the Big Foot which is still in production by the North Face Company. They are a single construction bag and have the standard nylon shell inside with olive drab on the outside. The bags have a draw-string closure with cord lock, and a heavy duty mil spec two-way zipper. Dimensions are 32" x 72" x 19½". Filled with Polarguard insulation for a total weight of 4 lbs., 10 oz. Rated to minus five degrees. \$99.95 plus \$6 shipping and handling. Two bags are \$195 postpaid. Major Surplus and Survival, 435 W. Alondra Blvd., Dept. ASG, Gardena, CA 90248; (213) 324-8855 or (800) 441-8855.

Each blanket weighs only 9.5 ounces and will not rustle loudly like metalized emergency blankets. \$8.95 plus \$3.95 shipping and handling or 6 for \$48 plus \$6.95 shipping. NITRO-PAK Preparedness Center, 13309 Rosecrans Ave., Dept. ASG, Santa Fe Springs, CA 90670; (213) 802-2635 or (800) 866-4876.



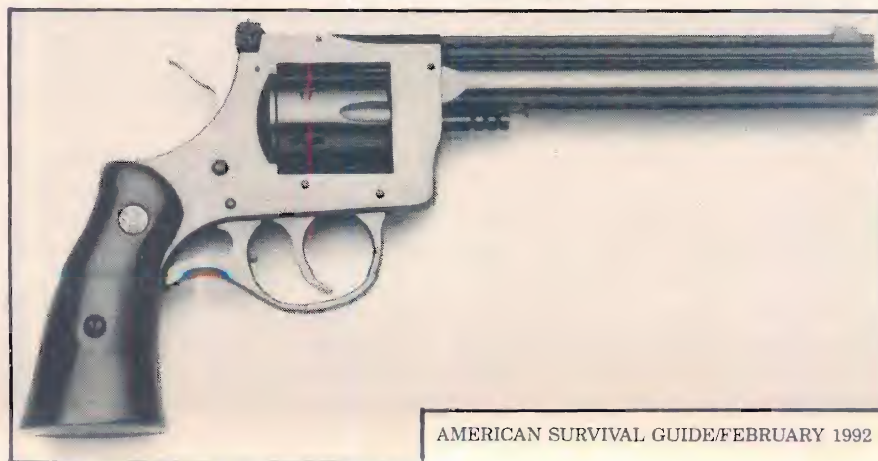
A.G. Russell Hunter's Scalpel

While this knife can be fastened to your key-ring it should not be confused with cheap little knives that are designed for key-rings and are made of the cheapest steel available. The Hunter's Scalpel is made using 8A, an outstanding Japanese cutlery steel that is the equal of 440A, and when properly heat treated really holds an edge. The steel is hardened to 57-59 Rc. The knife remains locked in its plastic sheath until you depress the locking button with your thumb. Includes a lanyard and a clip-ring making it possible to attach this little knife to just about anything. 8A steel model is \$18.75. There's also an ATS-34 steel blade for \$29.75. A.G. Russell Knives, 1705 Hwy. 71B North, Springdale, AR 72764; (800) 255-9034.

NEF Ultra Mag

New England Firearms has introduced a new version of its wellknown 22 Ultra target revolver. The Ultra Mag in 22 Winchester Magnum Rimfire (WMR) uses a solid frame action with a swing-out cylinder, and has a six-shot capacity. This new revolver uses a six-inch heavy target barrel with rebated muzzle and a rib that allows for the mounting of a scope. For those who prefer open sights, a fully adjustable rear sight is standard equipment. A smooth single- and double-action trigger, mated with target quality weight and balance, keeps shots steady. For more information contact:

H&R 1871, Inc., Industrial Rowe, Dept. ASG, Gardner, MA 01440; (508) 632-9393. ●



High-Low:

Diet and Longevity

'Fully two-thirds of Americans die from disease caused by poor diets' . .



Dr. Roy Walford, professor of pathology at UCLA and author of *How to Double Your Vital Years, The 120-Year Diet* (Kate Dumont).

By Becky Gillette

IF you've ever been in a true survival situation where you were forced to go without adequate food for days or even longer, you might have been surprised to find yourself coping with the lack of food much better than expected.

Actual military studies have shown that after fasting for a couple of days, the reaction time of the subjects actually improved. Perhaps the analogy would be that the hungrier you are, the faster you can snare a rabbit.

For a society that practically makes a religion out of eating three meals a day, it may come as a surprise that skipping meals occasionally isn't a sin against your health.

In fact, passing up the dinner table occasionally or even fasting for a day or two may be one of the healthiest things you can do. Instead of weakening you, as many might suspect, there is a strong scientific evidence that dietary restrictions, what anti-aging guru Dr. Roy Walford calls "under-nutrition without malnutrition," can slow down the effects of aging and prolong life far beyond the average.

Walford, a medical doctor who has done extensive research into how diet affects longevity, is a strong advocate of what he calls a "high-low diet" which emphasizes food that are "high" in nutrients and fiber but "low" in calories.

He believes the diet, which he has personally adopted, is *the most effective anti-aging therapy* available — better than megadoses of vitamins or other regimens purported to slow down the aging process.

Walford says that his "high-low diet" is, basically, a diet fountain of youth: it can retard the effects of aging and thus prolong youth and middle age, prevent the major diseases such as cancer and heart disease that most Americans now die from, and extend the maximum life span — possibly to a high of 120 years.

In press reports, Walford's diet has been referred to as a "starvation diet." Most accounts of his formula for slowing down the aging processes don't argue that he's wrong, but simply that he's asking too much. Americans should adopt a diet of self denial? We should weigh 10 to 20 percent less than what most medical authorities consider

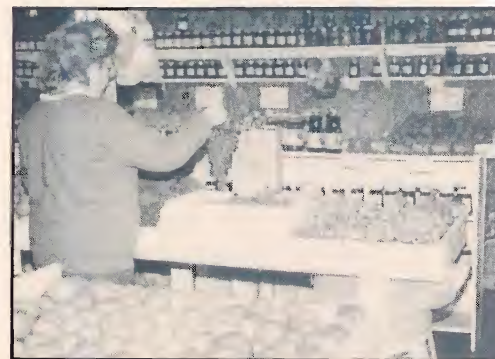
optimal? Considering the millions of Americans spend on diet aids and the fact that, statistically, a person has a better chance of beating cancer than losing weight permanently, it is apparent that shaving 10 to 20 percent off your weight is a difficult challenge.

Walford, the author of *How to Double Your Vital Years, The 120-Year Diet*, published by Pocket Books, says there is a high probability (but not absolute proof yet from human studies) that dietary restrictions could increase the average person's maximum life span by as much as 50 percent.

"There is no doubt that the life span of animals can be extended by more than 50 percent by dietary means, corresponding to humans living to be 150 to 160 years old," Walford says. "I don't actually expect quite to achieve this much life extension in humans. The necessary regimen would be too tough; but a less rigorous regimen will still add many years to your life, as well as life to your years."

The current life expectancy for people in their 30s and 40s is about 85. Walford believes that with the diet he recommends, the life expectancy could reach as high as 120.

Walford, a professor of pathology at the University of California at Los Angeles (UCLA) School of Medicine, bases his longevity theories on experiments done with mice and other animals both in his and other labora-



Fresh fruits and vegetables are high in nutrients and fiber and are believed to help prevent cancer.

tories. The evidence shows that when animals get enough vitamins and nutrients, but are on a calorie-restricted diet, average and maximum life spans are greatly extended. The thin rats live much longer than their fatter peers, remain fertile and sexually active longer, and show greater brainpower at advanced ages.

Despite public health messages that abound with information that dietary fat is a killer and that fruit, vegetables and high-fiber foods can prevent cancer and heart disease, obesity in America actually increased in the last decade. The thinnest American men are only as thin as the most obese Yugoslavian and Finnish farmers, and more than half of adult Americans have serum cholesterol levels above the optimum level. According to the National Health Examination Survey, in the 25 to 74 age group, 26 percent of men and 29.4 percent of women are overweight. Nearly one out of 10 Americans is obese.

The *Surgeon General's Report on Nutrition and Health* points out that obesity is a fairly recent development, not showing up until it began to appear in the English upper classes in the 18th and 19th Centuries. "One hypothesis suggests the ability to store excess calories as fat in adipose tissue was useful during prehistoric times as a protection against food shortages," the report states. "However, this ability later became a handicap in industrialized societies. The industrial revolution allowed food to be available consistently and reduced the physical effort needed to obtain, process and prepare it. Increased control of infectious diseases, modern transportation, and increasingly sedentary patterns of work and recreation contributed to the presence of the current high level of obesity in the United States."

Fruits, Vegetables — But the total weight is only part of the picture. Evidence suggests that being thin is no advantage if the diet consists primarily of convenience foods high in fat and sugar. The proof is overwhelming that the health advantages come from eating plenty of fruit and vegetables, preferably fresh and not overcooked, and whole grains. In limited quantities, low-fat dairy and meat products are healthy, too.

Unfortunately, few Americans take the diet advice either of Walford or the Surgeon General. A National Cancer Institute study of 11,000 Americans revealed that on an average day 40 per-

cent of Americans do not eat a single fruit; 80 percent don't eat any high-fiber breads or cereals; 20 percent turn their noses up at vegetables entirely and only about half eat any vegetables other than potatoes or salad; and fiber intake averages only about 11 grams, much less than the recommended amount of 20 to 30 grams. What Americans are eating daily, at least 40 percent of them, is bacon or lunch meat, foods high in fat and salt which are generally smoked or cured with nitrates.

The bottom line: fully two-thirds of Americans die from disease caused by poor diets, a passion for hamburgers, french fries, ice cream and pizza in lieu of beans, broccoli and oatmeal. In 1987, 1.5 million Americans died of diseases inked to a poor diet.



That brings up an interesting point for survivalists. What good is it to take precautions to survive a major world war or a devastating natural and/or environmental disaster if your daily diet is leading to an early, preventable death? And you can bet that following a cataclysm you're not going to be able to depend on heart bypass operations to undo the damage caused by a poor diet and lack of exercise.

It's interesting to speculate that we might all actually be healthier under survival conditions, "lean and mean" from eating out of our own garden, instead of depending on the supermarket. Of course, if a survival situation meant eating only preserved food or not having enough food to insure adequate nutrition, then there would be negative health consequences.

But one important point for survivalists is that an adequate supply of canned and dried foods should be only part of the picture. Having the capability of growing fresh fruits and vegetables is also of paramount importance. Besides the superior nutrition of fresh as opposed to canned or frozen, food stores have only a limited life. If you have a two-year food supply, what happens at the end of two years? A garden, on the other hand, is capable of producing a bountiful harvest every year.

People interested in getting maximum nutrition from a limited amount of food might want to consider buying *Dr. Walford's Interactive Diet Planner*, a computer program designed for maximum nutrition from 1,500-calories of food per day. The com-

When it comes to eating a high quality diet, eating fresh from the garden can't be beat.

puter program lists combinations of foods that are very high in nutrient value and low in calories that will meet all essential dietary needs. The planner is available for \$95 plus shipping from Long Book Company, Suite 1215, 1015 Gayley Ave., Los Angeles, CA 90024.

Walford also has a new book coming out co-authored with his daughter, Lisa Walford, called *Easy Dishes for the 120-Year Diet* being published by Pantheon. "The menus in original 120-year diet take too much cooking," Walford says. "We're making it a lot easier to cook the 120-year diet with the new cookbook. People on this kind of diet feel much healthier quite promptly."

There is increasing interest in the

Diet and Longevity

subject of how diet affects longevity. "The whole field is expanding," Walford says. "Dietary restrictions are the most powerful cancer preventative regime available. That's now well recognized."

There is overwhelming evidence that fresh fruits and vegetables contain ingredients that help prevent cancer and other diseases. So you can't do better than simply eating fresh out of the garden (hopefully an organically grown garden, or at least one that uses a minimum of harmful pesticides) while taking precautions to make certain you're getting a well balanced blend of vitamins, minerals and protein. Any tilt towards fruits, vegetables and whole grains and away from dietary fat, refined flours and sugars will be healthy. That sort of diet change alone should take off some of the flab.

But it's possible to eat too much even of good foods. So, considering Walford's theories, we might ask, "How little is enough?" How much do we need to cut our calorie intake in order to feel younger as age advances, prevent dietary-caused illnesses and extend our number of productive, healthy, sexy years? Because "undernourishment" is an important part of Walford's plan, the idea is that the biggest health benefits accrue from a gradual reduction in daily food intake or even fasting a day or two a week, like Walford does.

For people of normal weight, Walford recommends a very gradual weight loss until reaching a goal of 10 percent below your "set point," your normal weight if you don't overeat or undereat. For obese people, the goal would be 25-percent below set point.

Since animal studies have shown that rapid weight loss can decrease longevity, Walford recommends a very gradual weight loss over a period of four to six years. He believes that most people could lose that much weight simply by adopting a high-quality diet, his high-low diet that emphasizes lower fat and refined food intake balanced by more consumption of fruits, vegetables and whole grains.

While the American Heart Association recommends that fat consumption be lowered to 30 percent from the current average of about 40 percent, Walford takes that a step further and recommends that the percentage of fat in the diet shouldn't exceed 20 percent. But that's still higher than the

10 percent fat level recommended by Nathan Pritikin to prevent heart disease.

Besides the 20 percent fat, the high-low diet also calls for 16 to 24 percent of calories from protein, and the rest of the calories from carbohydrates, preferably complex carbohydrates such as vegetables, whole-grain and cereals. The diet also specifies less than 300 mg. of cholesterol, and 40 to 60 grams of fiber per day. Although you can do the diet as a vegetarian, "it's a bit difficult to concoct fully adequate 1,500-to 2,000-calorie food combinations with no meat at all," Walford says. He favors fish and poultry over red meat because of its high fat content.

The bottom line on the high-low diet is to emphasize nutrition while minimizing calories. Aerobic exercise 15 to 20 minutes three or four times a week is also recommended, which is the standard exercise prescription agreed upon by most experts.

Walford doesn't recommend a severely reduced-calorie diet for children. But he says his studies have shown that the high-low diet produces good results at whatever age it is begun; he recommends beginning the diet after age 18 to 20 except during periods of pregnancy.

But starting a child on the road to good eating habits should start as soon as the first spoon is lifted to a baby's mouth. Walford says parents should allow children to eat as much as they want, but only of good foods. Parents should set a good example with their eating habits since children, for better or worse, usually end up eating like their parents.

Walford personally has found it easier to get below his set point by fasting one or two days a week, and then eating his normal diet the rest of the week. But he emphasizes that isn't necessary to his program.

"People tend to fixate on the fasting," he says. "But that is not an essential part of the whole thing. It's just that you have to gradually lose weight over about six years until you're so much below your set point. And if it is easier for you to do it personally by fasting once a week, rather than eating a little less every day, it doesn't make any difference."

"I find that if you fast one day a week it kind of disconnects you from feeling you have to eat every meal. But, again, I'm not necessarily recommending short-term fasting. It's just how one individual finds it comfortable to reduce overall intake."

Another nutritional factor addressed by Walford is vitamin and mineral supplementation. Walford recommends that people on the high-low diet take small amounts of vitamins and minerals to avoid borderline deficiencies. He also states that taking substantially more than the Recommended Daily Allowances (RDAs) or selected nutrients will, "with a moderate order of probability (according to the evidence), enhance your average survival prospects. But (again according to existing evidence) it will *not* expand anybody's maximum life span."

Currently only three to five people out of 100,000 live to be even 100 years old. We'll have to wait until the year 2025 to see if Walford is one of them. And even if he doesn't make it, that certainly won't negate his theories. So if longevity is your goal, if you want to live longer and feel and act like 40 when you're 80, as Walford envisions, you don't want to wait until 2025 to make the changes in your diet that could increase your odds of enjoying life long beyond what is now considered average. If living a long and healthy life is a number one goal, then pass up the bacon and eggs and bring out the oatmeal. ●

The key to the longevity diet is eating foods that are high in fiber, vitamins and minerals and other nutrients yet low in fats and calories.



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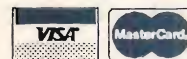
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Staff Evaluation

SIXTY bucks for a flashlight?! That's right. That's the price of the Sure-Fire 6P Flashlight made by Laser Products and available from the Cutlery Shoppe. It's worth that much... if you value having a light source that is as high powered, high quality and dependable as the Sure-Fire is.

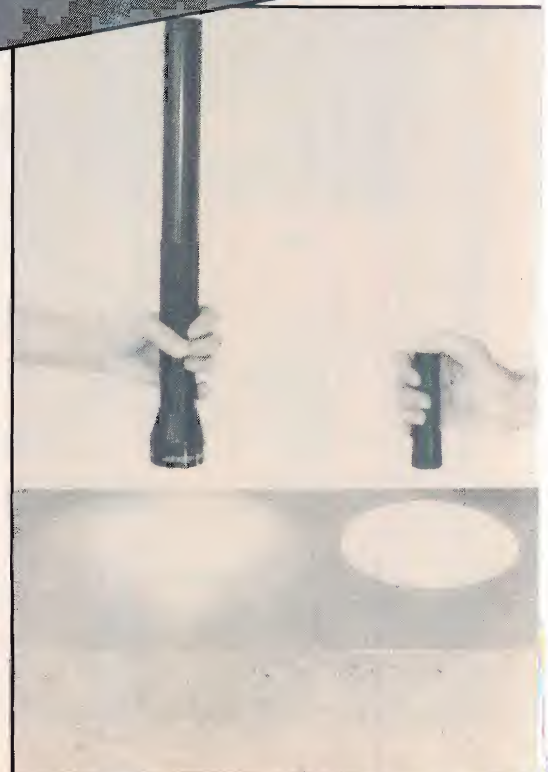
The 6P is designed for military and police use but it's available to anyone who simply wants the best and most powerful flashlight available of its type. It's only 4.9 inches long with a 1-inch diameter body and 1.25-inch diameter head. Weight with two 3-volt lithium batteries is under 5 ounces. The 6P is made of tough black 6061 aluminum with checkered and striated surfaces for a sure grip.

The batteries will provide one hour of use and will store for up to 10 years. The high pressure xenon lamp puts out 6 watts of power. When the rear section of the flashlight is screwed closed the 6P provides continuous light but backing the rear section off slightly turns the light off. A special push-button switch on the rear of the 6P allows the user to flash the light for only as long as needed. Releasing pressure on the switch button instantly turns the flashlight off.

The Sure-Fire is so bright it actually hurts your eyes to look into it. You have the power to reach out 25 meters or more in total darkness to fully illuminate and identify threats or anything you need to see. There are no dark spots or rings either. You see



This photo, taken inside a home at night, gives some idea of the brightness of the Sure-Fire 6P.



The Sure-Fire 6P's brightness, right, compared with a much larger, 5-D-Cell alkaline-powered flashlight (Laser Products photo).



Two 3-volt Duracell DL123A lithium batteries will store for up to 10 years and still provide up to 1 hour of light in the 6P.



The 6P weighs less than 5 ounces with batteries and is under 5 inches in length.



High pressure xenon bulb and proprietary reflector surface are the secret of the 6P's powerful light.



This push button pressure switch at the back of the 6P turns the flashlight on by pressing on it. Releasing it turns the flashlight off.

only a bright, symmetric center beam with smooth, uniform background illumination. The beam is factory pre-focused so there's no fiddling with rings or other controls to adjust the light. The high pressure xenon lamp and proprietary reflector surface are the keys to the bright light available. They work together and must be replaced as a unit.

Two Duracell DL123A lithium batteries will provide up to an hour of light in the 6P. Since two of the batteries are only about as long as your little finger you can carry enough light in your pocket to get the job done, no matter how long it takes.

Another impressive feature of the Sure-Fire 6P is its performance in cold weather. It will work in freezing temperatures when other flashlights will die. Cutlery Shoppe personnel who have tested the 6P for two years, report it will work in sub-zero conditions.

In fact this flashlight is so powerful it can overheat if left on continuously while sitting face down on a flat surface or under any covering material which traps heat and caution must be taken to avoid these situations.

There is also a slightly longer and rechargeable Sure-Fire 6R flashlight which uses nickel-cadmium batteries. It's basically the same flashlight with 2-inch extender, nicad battery and recharger. The 6R can be recharged up to 500 times and puts out an incredible 20 percent more light when fully charged.

Basketweave or plain black leather duty belt sheaths are available for the 6P and 6R, along with black nylon duty belt sheaths. Or they can be carried in your pocket. Their small size makes them easy and convenient to carry anywhere.

Laser Products also makes special weapons-mounted lights using the same high intensity lamp used in the Sure-Fire flashlights which can be used with shotguns, rifles and handguns. These weapons-mounted lights are also available from the Cutlery Shoppe and were designed for law enforcement and military applications.

The 6P is available for \$60 and the 6R is \$99.50 from Cutlery Shoppe. You can also buy a recharging adaptor for the 6P for \$63 as well as spare lamp assemblies, and spare batteries. A flashlight lanyard is \$3. Contact the Cutlery Shoppe, Dept. ASG, 5461 Kendall Street, Boise, ID 83706-1248; for telephone orders call toll free 1-800-231-1272; for information call 1-208-376-0430; fax orders 1-208-376-7608. ●

Sierra Supply:

New Meals Ready To Eat

The latest 1991 contract military MREs and new compact heating device...

& MRE Heaters

Staff Evaluation

SIERRA Supply is now selling the latest 1991 contract "Meals Ready To Eat" (MREs) and the new military MRE heaters for quick hot meals anywhere.

The MRE's all include accessory packs with the new 8-ounce entrees in a brand new menu selection: pork & rice in barbecue sauce, tuna with noodles, ham slices, chicken Ala king, chicken stew, chicken with rice, beef stew, spaghetti, meatballs with rice, ham omelet, escalloped potatoes with ham, and corn beef hash.

If these meals are stored in a cool, dry, constant temperature location, they will keep up to seven years.

A package of 10 complete MREs is \$33 plus \$10 shipping. Or you may buy a package of 50 meals for \$150 and \$34 shipping anywhere east of the Mississippi River and \$26 anywhere west of the Mississippi. Call or write for large quantity prices.

In 1991 the U.S. military introduced the MRE heater. This compact heater was designed to quickly heat an entree pouch under any weather conditions in the field. It is an enclosed pouch using a cup of water to activate the chemicals inside. Fifteen minutes later you can have a piping hot meal without using flames, smoke or canteen cup to boil the water. Simply throw the used heater package away when done.

Note, vapors released by the activated heater element contain hydrogen, a flammable gas. Do not place in or near an open flame of any type. Vapors released by the heaters can displace oxygen. When using inside a car or other vehicle be sure there is proper ventilation.

The MREs are from a 1991 contract and will keep up to seven years.



To activate MRE heater tear open the pouch, add about one ounce of water to the bag (to fill line).



The contents of one MRE pouch. Shown here is the entree, pork with rice in barbecue sauce, apple sauce, crackers, beverage powder, cheese spread, grape jelly, and accessory pack.



We tested a heater and found it worked perfectly. You simply tear open the heater bag, add water to the fill line, about one ounce, then drop in the MRE entree. In our case the entree was the pork with rice in barbecue sauce. The heater bag is then folded closed

and the bag is placed on a level surface while it heats. A rock or other object can be placed on top of the bag to keep it closed. Within a few minutes steam was rising from the bag as the water boiled. Remember, there's hydrogen gas



Contents of the accessory pack include instant coffee, cream substitute, sugar, salt, chewing gum, matches, toilet tissue, hand cleaner (wetnap napkin) and candy.



Bag is folded closed while heating element heats up water (takes about 10 to 15 minutes).

MRE entree is placed in bag with water and heater element.

Eating the heated entree after it was removed, piping hot, from the heater bag.



given off, so don't inhale the fumes. after about 12 minutes, the bag was opened and the entree removed and opened. It was very hot. Testers who sampled it said it tasted great — a real hot meal.

The heaters are available for \$1.75 each, two for \$3 or 10 for \$10 plus \$4 shipping per order.

For more information or ordering contact Sierra Supply, Dept. ASG, P.O. Box 1390, Durango, CO 81302; phone (303) 259-1822. ●

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European American Armory:

PM2 Shotgun

Italian-made, magazine-fed, slide-action 12 gauge. . .



By Jim Benson

THE PM2 magazine-fed, pump shotgun is made in Italy by the arms maker ATIS and was introduced on the U.S. market last year by the new American firm European American Armory.

Firing 2¾-inch or 3-inch 12 gauge loads, the PM2 has a unique magazine feeding system, utilizing 6-round box magazines. The empty magazine tube under the barrel can be used for stor-

age of various items, for mounting laser sights or for other uses such as to hold lead weights in pin shooting competition. The empty tube comes with a screw-on knurled metal cap.

The PM2 features Remington 870-type dual action bars for strong, smooth, reliable and simple operation. The 20-inch barrel has a cylinder bore. The standard sight consists of a brass bead at the top of the muzzle. Serrations on top of the receiver make sighting easier and break up glare. This shotgun, which EAA sells direct to dealers, can be fitted with the popular Sage sights on request as an option.

The standard fixed stock is wood

and the rest of the gun is steel except for the aluminum alloy receiver and composite fore arm.

The bolt release is located in front of the trigger guard rather than on the receiver near the trigger as with other pump shotguns. The steel magazines are released by pushing a lever located at the rear of the magazine well and in front of the bolt release.

The safety is the cross-bolt type located behind the trigger guard. A red band protruding on the left side of the bolt indicates the shotgun can be fired.

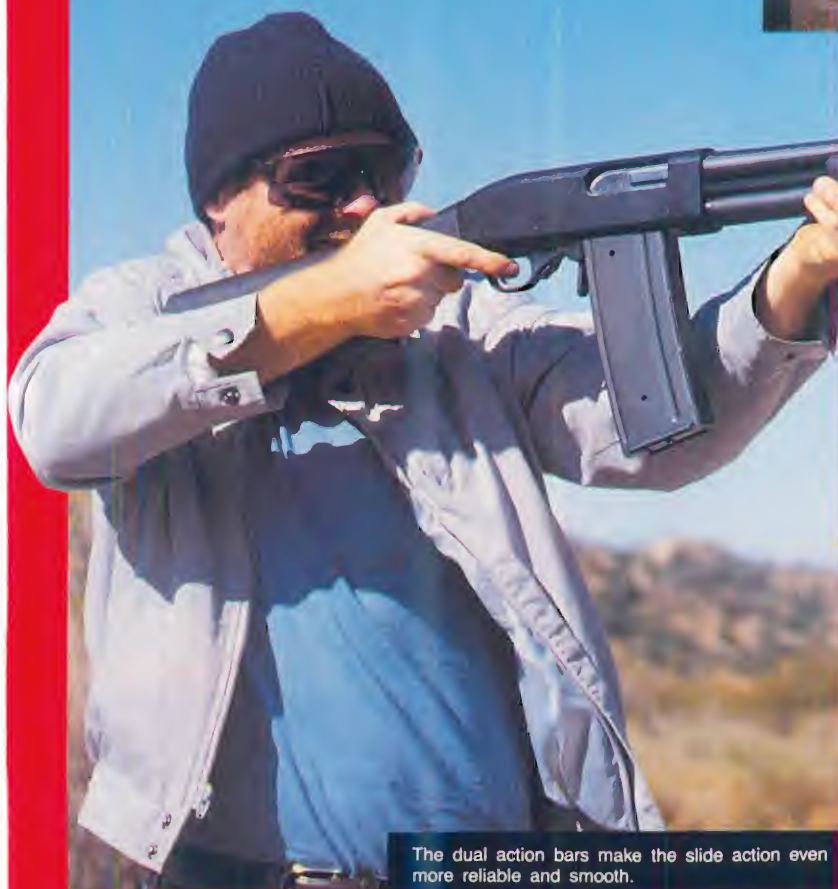
The overall finish is matte black on the standard Model PM2B and chrome

(Continued on page 66)

The standard fixed stock PM2 with black finish. Magazine holds 6 rounds, either 2¾- or 3-inch shells.



Results of firing some different loads from about 15 yards.



The PM2 handles and shoots well. It weighs less than 7 pounds empty.



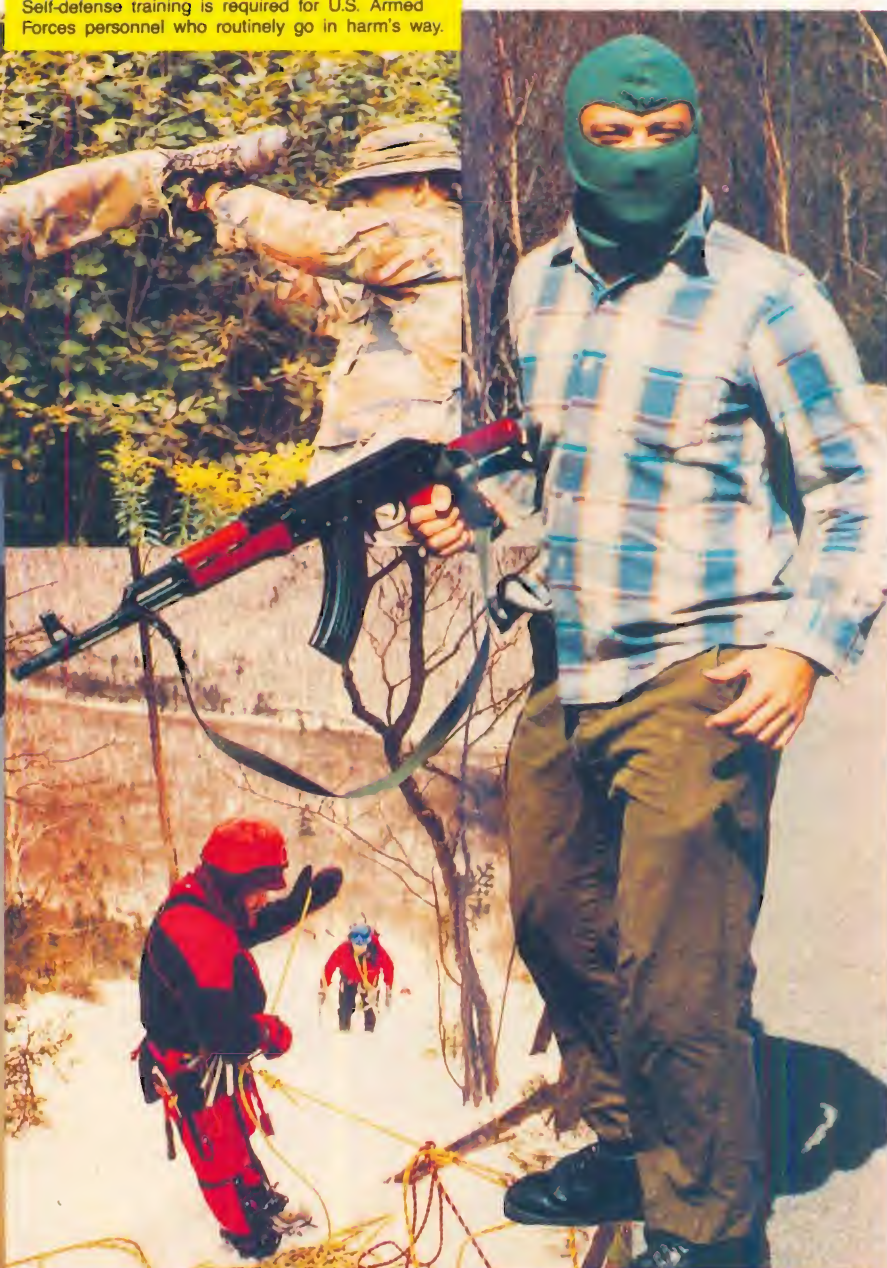
The dual action bars make the slide action even more reliable and smooth.

DoD:

Survival of the Fittest

The philosophy, mission and training of the U.S. military's survival schools. . .

Self-defense training is required for U.S. Armed Forces personnel who routinely go in harm's way.



Mountaineering and winter survival skills have come in handy for numerous military personnel operating in rugged terrain (Ted Goss).

Some DoD survival courses teach terrorism avoidance measures to protect their people in high-threat regions.



Parachuting is a skill many military people participate in, and is a skill several pilots had the opportunity to practice during Operation Desert Storm.

By Ian MacPherson

DURING World War II, War Department thinkers began to look

at the necessity of teaching its fighting men how to survive if downed behind enemy lines or cut-off from friendly troops.

As the war in the Pacific raged, and

Hitler's rugged troops were battling the Allies in Europe and North Africa, the number of men evading capture and surviving in the wilds of the Sahara, the Philippines, Norway and China was growing at an alarming rate.



Two sailors — graduates of the Navy survival school — dig for ghost crabs on Antigua, in the Tropical Environment Survival Training (TEST) course.



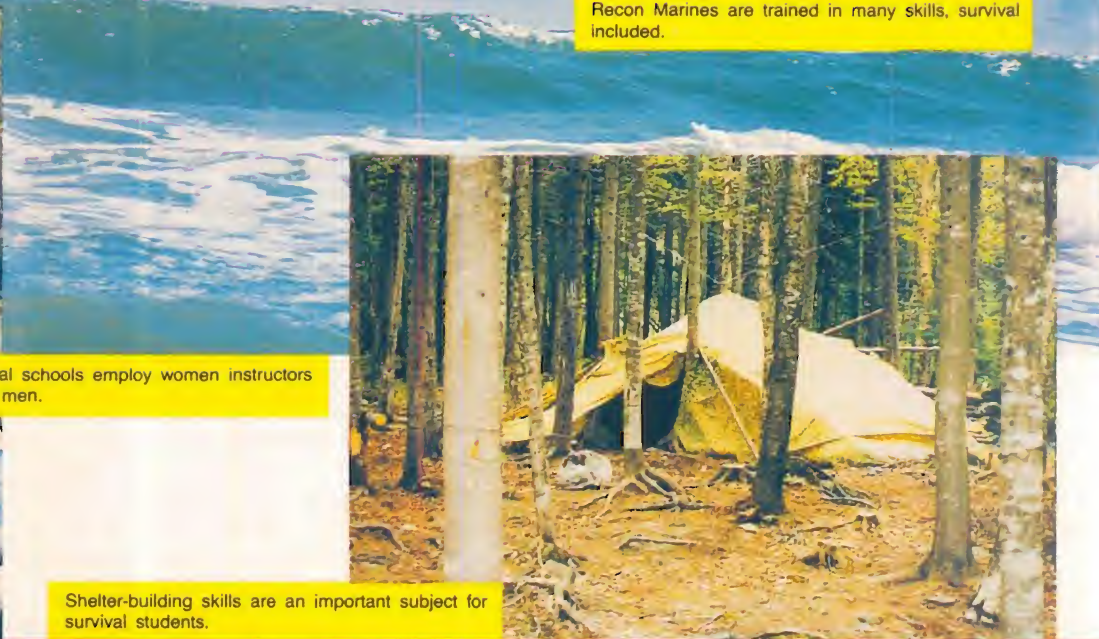
A Navy survival instructor using coconut husk fiber as tinder.



Recon Marines are trained in many skills, survival included.



DoD survival schools employ women instructors as well as men.



Shelter-building skills are an important subject for survival students.

Survival training courses like the Navy's VFive Program, began popping-up around the country at various locales, with mixed results. But they lacked continuity, and their effectiveness was sporadic, at best.

As the war ended, interest in survival training waned as well. A mass exodus was underway, with experienced men leaving the military in droves due to the massive drawdown in what some less-than-far-sighted bureaucrats saw

as the necessary levels of manpower in the Armed Forces.

Then the communist North Korean forces invaded South Korea, and America was caught unprepared — again.

(Continued on page 62)

Hunter, Conservationist:

Ted Nugent and the Survival of Hunting

This popular rock and roll star is one of the strongest voices against the anti-hunting lobby. . .



Bowhunters Magazine, a periodical concerned with the art and love of bowhunting and pro-conservation issues.

ASG: When did your fascination for hunting begin?

Ted: Fascination is the right word. I was born in Redford Township (Michigan) and the Rouge River was near my house. From the minute I can remember from the age of six or seven I used to walk by it and was fascinated with the characteristics of the river. I started shooting bow and arrow, slingshot and BB gun and it became a passion. My dad was a casual sportsman who continues to enjoy the outdoors for the tranquility and although he and my uncle exposed me to it, that really doesn't explain the intensity of my fascination with it.

Ted has founded the World Bowhunters Organization and publishes *World Bowhunters Magazine* (John Mielcarek).

An interview by Jerry Younkins

TED Nugent is that rare individual whose feet are firmly anchored on two shores. Since 1966 the "Motor City Madman" has been in the public eye through his prowess as a rock and roll musician and a number of critics consider him to be one of the finest technical guitar players rock has ever produced. His current band, Damm Yankees, had the 13th most popular album on the charts when this interview was conducted and in 1990 were the single most requested band on rock radio stations.

Ted is also widely known for his skill as a bowhunter and conservationist.

Ted Nugent avid hunter and a spokesman against animal-rights activists (John Mielcarek).

It may come as a surprise but Nugent has become the single strongest voice opposing the anti-hunting lobby, a group that is threatening one of the most basic of all rights. Ted's position as a proponent for hunting has allowed him to introduce hundreds of young people to the drug-free world of bowhunting and the outdoors. Nugent, in a business famous for the substance abuse of some of its major stars, has been drug and cigarette free his entire life and is involved in the anti-drug campaign to the hilt also.

Ted also founded the World Bowhunter's Organization and publishes *World*



ASG: At what point did you begin to think of yourself as a serious hunter?

Ted: By the time I was fifteen or sixteen. I took my first deer in November of '68-opening day. Manistee forest. I got it with my dad's Model 70 .308 shooting a 160 grain Federal factory load. It was right after sunrise. I took a running shot at 150 yards because I shot a lot. It was exciting. My first bow kill was in 1970.

ASG: I find four major obstacles facing hunters either now or in the near future. These are possible anti-hunting statutes, ban of firearms ownership, loss of access to public and private wildlands and slob hunters — the poachers and sign shooters. Could you comment on each?

Ted: How about the apathy in the ranks of existing hunters as well. Hunting has remained status quo with only a slight decrease in numbers the past few years. I think it's attributable to those four points. My perspective is unique. In defiance of those obstacles we can expand the numbers of hunters by more open communication with younger people. If your relatives or close friends don't draw you into the sport there is a 99 percent chance that you'll never hunt. What we have to do is establish a communication with young people that tells them that hunting, the shooting sports, wildlife conservation and time in the outdoors is COOL. It ain't cool to hang around malls. It ain't cool to dull your senses but rather to hone them. If you want to feel cool get close to a big game animal. Learn to read the outdoor conditions, learn to use your senses as you've never used them before.

ASG: The term conservation was coined by a hunter and you yourself are known as a hunter-conservationist but many people do not see the vital link between hunting and conservation. In fact the media often portray hunters as enemies of conservation. How does conservation benefit hunters and vice versa?

Ted: Conservation means the "wise use." You conserve timber by using it wisely. Both hunting and non-hunting conservation organizations know the essentiality of harvesting wildlife. You must harvest based on population dynamics and existing habitat. Anybody who doesn't understand how that works should go to the library and check what happened at the Tsavo game refuge in Kenya in 1970. That year there were 150,000 elephants in the Tsavo. They were exceeding their range and starting to denude part of

the refuge.

Scientists, biologists, hunting and conservation organizations came in and agreed that the elephants were literally eating themselves out of their home, a home that also supported antelope, bugs, birds and flowers. When elephants decide they're hungry they don't leave something for the hummingbirds, they just eat. The head of the Kenya game department decided to let nature take its course. Needless to say 11 years later there were no elephants! Zero! Gone! Every last elephant destroyed! A 100 square mile

going to save a deer's life which is just the opposite of what will happen.

ASG: They have an argument that doesn't hold water then?

Ted: Yes. It's easy to tip it over which I enjoy doing.

ASG: In the Ozarks where I live many people still hunt, fish and trap for sustenance as opposed to pure sport. While the excitement of the hunt is every bit as real the goal is slightly different. I believe I heard you say that your family consumes only meat hunted in the wild by yourselves. Did I hear correctly?



Ted considers himself a hunter-conservationist and believes that hunting provides a vital link between man and nature (John Mielcarek).

game preserve turned into a moonscape. This is what happens when you either don't conserve or don't use hunting to conserve a resource.

ASG: Why do you suppose the national media is so avowedly anti-hunting and anti-firearm? This is certainly no exaggeration and includes network television, national periodicals and a large number of major newspapers, some of whom oddly enough publish excellent outdoor columns?

Ted: They have all the information they want. There is a lot more out there but they ignore it because they are comfortable with the info they have and their conclusions would be shattered if they had more. They are happy thinking that by fighting hunters they are

Ted: That's right. I have never bought any domestic stock at home. I only eat what I kill — deer, hog, antelope, bear. Here's an interesting adjunct. I'm 42 years old. My doctor said she had never seen lower cholesterol, attributable to one simple premise. Game meat has no fat to speak of.

It's been a law in the Nugent household that we utilize everything we kill. I don't hunt for sport or recreation. I would not think of killing an animal for a game. It's a sacred endeavor to take the life of an animal.

I don't think that cougars, cheetahs, or wolves look at it like we do because

Ted Nugent and the Survival of Hunting

they don't have the same sense of reason. I believe the hunting function itself is one of the most direct that God designed into man. Unlike the service oriented people of our society who think of a cheetah killing a baby animal and go "isn't that terrible!" I hold a contrary opinion. It's beautiful when a hawk catches a baby rabbit and kills it. It's beautiful when I take a deer. I don't feel any sadness at all but feel proud at having executed the equation of life. If I shed a tear, and I have, it's because I'm so thankful.

ASG: *The National Safety Council estimates that in 1989 more than 350,000 deer were killed on American highways resulting in 100 deaths and 7,000 injuries. What do you think would happen to these stats if hunting were banned?*

Ted: Within two years those statistics would double. That's what I ask some of these anti-hunting people — "Is it your goal to see 200 deaths?" Because of the population dynamics it would take four to six years to peak and the carnage would be unbearable. In New Jersey they banned hunting in certain little suburban areas and human fatalities doubled. It's not theory or supposition. It's been proven.

ASG: *Some sportsmen believe that there is room for compromise with the anti-hunting forces. Others, including myself, believe that the anti-hunting lobby will accept no compromise and that their ultimate goal is complete ban of hunting, trapping, yes, even fishing as well as to try and make a large percentage of government owned wildlands off limits to human travel. How do you deal with people like that?*

Ted: You have to realize that these people only represent maybe three percent of society. If it were not for their unreasonable input into the general media I'd say just ignore them. It's so insane. It's like a bunch of people saying one plus one equals three. What are we gonna do about it? Well, we know one plus one doesn't equal three. The real insanity is that they get their equation printed in the media and people buy it. That's the damage. To that I say education.

There's a bunch in our own ranks that are a couple bricks short of a full load, our slob hunters, sign shooters, game law breakers and drunken murderers — the ones that shoot each other are often drunk or high, then they are

hung out by the media as a representation of all hunters. Somehow we have to expose the extremists whose wildlife equation is that one plus one equals three. Expose them for what they are. Their attitude is that a goat is a pig is a dog is a boy. That is what the animal rights people believe and our saving grace is that average Americans are offended by that.

Did you notice that during the Gulf War there wasn't much in the media about animal rights? Our brothers and sisters, sons and daughters were sacrificing their lives for the American way and freedom and the common good. How dare anyone say that a goat, a pig or a dog is equal to those valiant men and women. The animal rights people know that Americans would reject that repulsive stance.

ASG: *What is ironic about this is that*



there are many points the animal rights people should agree on with hunters.

Ted: Unfortunately yes, because if they had their brains plugged in they would worry about what's good for the critters. They don't give a s--- about the animals. They are the same people who said don't shoot the elephants in Tsavo, don't shoot 10 percent to save 90 percent. They have proven time and time again that their interest does not lie with the animals but with propagating their ignorant bliss.

Cleveland Amory went down to the Everglades in '73 when they had that heavy rain and the deer were isolated on little tufts of high ground. The Fish and Game Department was going to implement an increased season because the available foliage would not support the animals on it but Amory and his money making Jim and Tammy

machine went down there and said that's inhumane and there is no proof that it needed to be done.

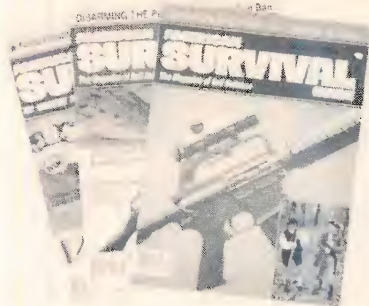
The biologists argued that there was proof and the Glades were divided into two zones. On the east Amory and his group was allowed to catch and transport deer while on the west side there was in increased harvest. Cleveland Amory and his boys went in there and captured 21 of the animals — 19 of which died in the nets and the other two had to be destroyed later. The net and capture of a deer is an extraordinary trauma to the system of a deer which they just can't handle. Plus a bunch of deer starved.

ASG: *Most readers cannot comprehend the lengths to which the more fanatical of the anti-hunting or animal rights will go to achieve their ends. They have essentially adopted the communist ideology that states the end justifies the means. One of the worst comes from the eco-terrorist organization Earth First! They recommend that members shoot cows during hunting season and blame it on hunters. Other groups douse fur wearers with red paint or blood. Still other groups interfere with hunters by following them on opening day and making noise or harassing the hunters. What can an individual or sportsman's group do to combat these people?*

Ted: When you are confronted you have to know how to handle the situation. I've always recommended a simple logistical approach. Hunt in pairs in some kind of area where you can keep track of your vehicle and camp. These people will destroy property and they will kill hunting dogs, an example of how they really don't care about animals.

I've seen this in its ugliest form. I've had vicious threats on my life and these are people who think that not only are animal rights equal to humans, but that they are greater. They literally would take my life because I love hunting. Cleveland Amory has come right out in one of his books and said it's good when there are hunting accidents. It gives me chills.

It's very important that we hunters clean up our own image and when we are in camp, adhere to something like the by-laws that we use in the World Bowhunters. We have to get rid of law breakers and the irresponsible element in our sport. ●



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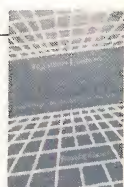
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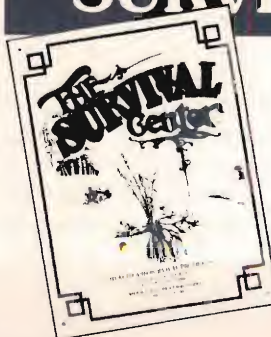
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IT'S humorous reading in the Special Projects (a division of Cold Steel) catalog about their excellent L.T.C. (Light Terrain Chopper) Kukri in comparison to the common imported kukris.

"Are you a kukri fan but are ashamed to be seen in public with one of those cheap Indian Government models with their shoddy handles, blunt blades and flimsy sheaths?" the catalog asks. The write-up goes on, noting that the L.T.C. is made of 1/8-inch-thick 1095 high carbon steel in the U.S.A., "not recycled fender steel beaten out on a rock in India."

Well, it's true that some of those imports do look pretty shabby. That's one reason none of us have ever bought one. Though some of them are of better quality and carry a higher price than those cheap, junky looking types.

Be that as it may, there's no doubt that the L.T.C. Kukri is an outstanding instrument made of top quality materials and very sharp—and it's being offered at only \$39.95 each, or two for \$70, or three for only \$90. That's a great value, especially when you consider that some of the other new American or Japanese-made kukris on the market today sell for well over \$100 and even \$200.

Actually, the L.T.C. is a lightweight version of Cold Steel's stainless steel ATC (All Terrain Chopper) Kukri. Due to the difficulty and expense involved in producing the ATC, it is being phased out but at this writing can still be purchased at the bargain price (compared to its original price) of \$149.95 (two for \$137.50 each or three for only \$125 each) through Special Projects.

The kukri in different forms has been used by the ancient Egyptians, Greeks, Romans and others. It was made famous in more recent history by the fierce Gurkhas.

The L.T.C. is made with Cold Steel's custom heat treatment with multiple temperings for maximum strength, toughness and edge retention. The



The L.T.C. Kukri is a lighter, economical version of Cold Steel's stainless steel ATC Kukri.

The blade is 1/8-inch thick and comes to a fine point.



This knife is well balanced, comfortable and very sharp.

blade is identical in shape and length to the ATC, but with a shorter bevel grind. The blade length is 12 inches. Overall length is 17 inches—the same lengths as the ATC, but the L.T.C. is only 18 ounces, compared with 23.3 ounces for the ATC. That's a significant difference, which would be especially noticed when using these knives for heavy chopping duties. The balance point of the L.T.C. is 3 3/4 inches in front of the handle, making it quite blade heavy. This is what you want in a large knife and gives you greater

cutting power.

The handle is ergonomically designed Kraton rubber, deeply checkered on the sides and striated on the top and bottom for a firm, comfortable grip. This handle absorbs shock and is extremely weather resistant.

The L.T.C. comes with a special slotted back, quick draw, black Cordura nylon belt sheath (belts up to 2 1/2 inches wide).

While we haven't had enough time, at this writing, for extensive testing of the L.T.C., our initial use of it has



The L.T.C. cut deeply and worked well on anything it was tried on.



The sheath will fit any belt up to 2 1/2 inches wide.

impressed us. It's indeed well balanced, lightweight and comfortable to work with and very sharp. It hacked right in to anything we tried it on, cutting deeply and evenly with each stroke. We didn't get tired, sore wrists after using it as we have with other kukris or similar knives we've tried.

Edge retention was excellent. Since this is high carbon steel, resharpening should be no problem either.

We find the L.T.C. to be a really well made, versatile and effective tool, and quite moderately priced. If you've been looking for a kukri but want good quality and a good price, you should be well satisfied with the L.T.C. Kukri. It's available only by mail from Special Projects. Order toll free by calling 1-800-255-4922. ●

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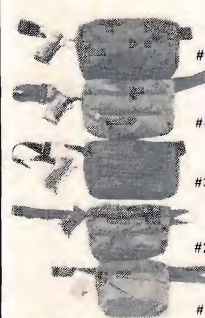
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NITRO-PAK:

DATREX Emergency Rations

Staff Evaluation

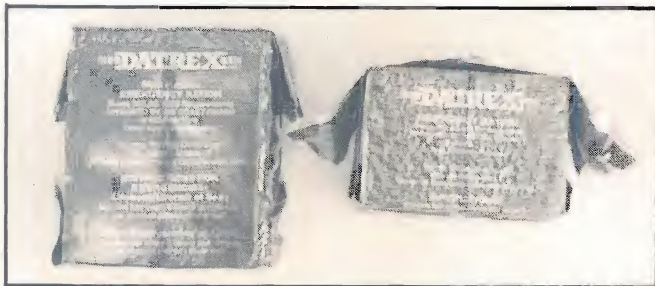
U.S. and foreign Coast Guard approved 3,600- and 2,400-calorie multi-purpose emergency food...

The rations are non-thirst provoking, tasting similar to coconut macaroons.



DATREX 3,600-calorie rations contain 18 200-calorie compressed food tablets and 2,400-calorie rations contain 12 tablets.

The 3,600-calorie ration, left, weighs about 1½ pounds. The 2,400-calorie ration, right, weighs about 1 pound.



Nutritional information is provided on the back of each ration pack. Storage life is five years.



DATREX, Inc. Marine Safety Equipment manufactures retort pouches of emergency water for life rafts and other marine craft. The firm also produces 3,600- and 2,400-calorie packets of concentrated emergency storage food.

Approved by the U.S. Coast Guard and the Coast Guard services of Canada and other nations, each 3,600-calorie ration packet contains 18 individual bars (servings) of 200 calories each.

The 2,400-calorie ration contains 12 bars of 200 calories each. These bars are made of wheat flour, vegetable shortening, cane sugar, water, coconut and salt. Each bar contains 3 grams of protein, 21 grams of carbohydrate and .75 mg of sodium.

The 3,600-calorie package weighs

about 1½ pounds while the 2,400-calorie ration pack weighs about 1 pound. The larger ration measures 4¼ inches high by 3¾ inches wide by 2½ inches thick. The smaller ration is 2½ inches high by 3 inches wide by 2¼ inches thick.

These are non-thirst provoking and will store for at least five years.

We ate some of these "compressed, concentrated food tablets," as the manufacturer refers to them, and found them good tasting, though somewhat bland. They reminded some of the tasters of coconut macaroons. While they do not induce a strong thirst after eating them, one tester said eating a ration tablet made him want a drink of water.

Clearly these are meant as short-term, high-energy emergency food and you would need other nutrients to

obtain proper nutrition over a long-term survival situation. But for short periods of several days they could be just the thing to keep you going.

Datrex Emergency Rations are available from NITRO-PAK Preparedness Center, Dept. ASG, 13309 Rosecrans Ave., Santa Fe Springs, CA 90670; (213) 802-0099; credit card orders call toll free 1-800-866-4876. Regular retail prices for the rations are \$8.95 each for the 3,600-calorie pack and \$6.95 each for the 2,400-calorie pack plus \$3.95 and \$3.75 each S&H, respectively. ASG readers may purchase these for \$6.95 each plus \$3.95 S&H for the 3,600-calorie ration and \$5.95 plus \$3.75 S&H for the 2,400-calorie ration. Or buy in bulk and save: 10 3,600-calorie rations for \$59.90 plus \$8.95 S&H, and \$52.90 for 10 2,400-calorie rations plus \$7.95 S&H. ●

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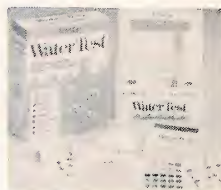
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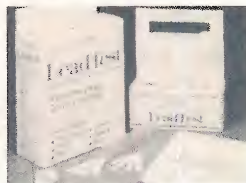
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Computer Vulnerabilities

We are increasingly dependent today on our technology and highly vulnerable when we lose control of that technology...

By Michael Pietrantonio

ON November 9, 1965, some 30 million American citizens along the East Coast experienced the first techno-disaster of the 20th century.

At 16 minutes and 11 seconds past 5 p.m. an electrical relay at the Sir Adam Beck power station at Niagara Falls closed. The relay was triggered by a momentary power surge in one of the main electrical transmission lines that ran from the Beck station to the city of Toronto. The relay was a safety device designed to protect the system from damage due to an overload.

When the relay closed it had the effect of simultaneously shutting down the 375-megawatt power transmission line which it was there to protect. The power that line had been carrying was now automatically rerouted to the four other major transmission lines that ran northward. Since those lines had already been running at near or full capacity they too became overloaded and their safety relays began tripping out. All of this happened in just 2.7 seconds.

With the main northward lines shut down, all of the power that had been flowing north was reversed. The system south of the Beck station then began experiencing the same overload-tripout sequence as had the system north of the station. Like a falling row of dominoes each local generating station and transmission line became overloaded and took itself out of the system.

Twelve minutes after the initial relay tripped at Beck, most of the lights from northern New Jersey through New York City to Boston were out. Subways and elevators stopped where they were. Being the height of the rush hour there were an estimated 800,000 people trapped in the New York City subways alone. Traffic lights

stopped working and traffic quickly stopped moving. Only half of the hospitals in New York City had emergency generators. Surgeons were forced to finish operations using flashlights held by assistants. Air traffic within the blacked out corridor had to be rerouted since airports had lost runway lights and control towers had lost communications. There was virtually no aspect of life within the blacked out areas that was left unaffected by the tripping of that single relay on that November day.

What the great blackout of 1965 did, or course, was to highlight in a most dramatic way how dependent we are on technology and how vulnerable we are when we lose control of that technology.

Further, it showed that as the technology upon which we depend becomes ever more complex and interdependent, it at the same time becomes increasingly vulnerable to the failure of even the smallest component. A \$20 relay trips in Niagara Falls and a multimillion dollar passenger jet carrying hundreds of people has to abort a landing because the airport suddenly goes dark.

If that lesson was true in 1965 it is even more so today. In the quarter-plus century since the blackout societal dependence upon technology, in particular computer technology, has become virtually total. There is no aspect of modern life which is free from this dependence. If the computers shut down tomorrow, so would the industrialized world.

We have made a Faustian bargain with our technology. We will enjoy the benefits of the information revolution, the computers which make possible everything from VCRs and automatic teller machines, to the life saving computerized medical imaging and treatment systems which we have come to take for granted. But for these benefits we pay a price — control. Or rather the lack thereof. The systems which we now depend on, in many cases for our very lives, have become too com-

plicated and interconnected for us to control totally. Consider the following;

In 1987 a computer controlled radiation therapy machine which had been used tens of thousands of times before without a problem, delivered an overdose of radiation to a cancer patient.

Instead of the 200 rads of radiation the patient was supposed to receive, she received a lethal dose of 20,000 rads. A few weeks later a similar machine in another hospital severely overexposed and burned another patient. The machine was inspected by technicians but nothing wrong was found. Just 22 days later the same machine burned and paralyzed yet another patient. The problem was eventually traced not to the machine itself but rather to the programming which controlled the machine. The programming error was so subtle, and required such a specific set of circumstances to occur, that it had remained undetected for years.

In June 1991 local telephone service in Washington D.C., Los Angeles, and Pittsburgh suddenly and without warning came to a halt. Technicians, unable to find a cause for the failure, brought the system back on-line. A few



Canadian Air Force personnel monitoring the North American Air Defense Command, NORAD, computers. Such vital military computer systems would be key targets for virus attacks (Canadian Air Force).

days later, at approximately the same time in the morning, telephone service was again lost. The pattern repeated itself through July 2. The cause was eventually pinpointed. Three digits, in a computer program some 2.1 million lines long, were found to be in error.

Then there are the hardware failures. In September 1991 a power failure occurred in a key AT&T switching station in Manhattan. Automatic battery operated backup systems kicked in to keep the system running. The battery backup however, was not connected to the devices which warn of a power failure. The station continued to operate normally until the batteries died at which point the switching center went off-line.

In a cascade-like effect, the loss of the switching center blocked more than 5 million incoming and outgoing calls to New York City. More importantly however, the failure of the switching center knocked out the Air Traffic Control, ATC, system in the entire New York City region. The ATC system relies on telephone lines that link together the various Federal Aviation Administration, FAA, computers used to control air traffic. About 90 percent of the communications into and out of the New York center were lost, including 50 primary and 16 backup radio communications channels, 30 computer data lines, and 60 lines used by controllers in different centers to communicate with each other. With the ATC system in the area almost completely out of service there was a real possibility of one or more mid-air collisions. John Enders, vice chairman of the independent non-profit Flight Safety Foundation, said of the incident, "we were fortunate that no one was injured."

Intentional Attack — The above incidents were accidents or errors. Computer driven systems are also subject to intentional attack.

Over the past few years the U.S. and other Western governments have become increasingly concerned that key computer systems are rapidly becoming one of the favorite targets of terrorists worldwide. Hundreds of bombings and other forms of physical attack have already been carried out.

In the book "TechnoCrimes," author August Bequai notes that, "a well placed bomb could easily cripple an entire computer network — with serious consequences for our society." He then recounts some of the attacks which have already occurred or been

attempted. In Germany some 24 attacks on computer centers within a one year period. In Japan an attack by terrorists on the computers of a construction company which was working on a controversial government project. In London, attempts by a terrorist group calling itself the "Angry Brigade," to bomb the computers of Scotland Yard and the London Police Department.

In 1989 the Senate Governmental Affairs Committee held hearings on the vulnerability of the U.S. telecommunications and energy distribution systems to terrorist attack. A senior Secret Service agent who had studied the problem testified that the networks, "present tempting targets" to terrorists. "The networks are exposed, they are vulnerable; chances of a successful attack are highly probable, and significant economic damage might be inflicted as a result."

Bombing is perhaps the crudest method of attacking vulnerable computer networks. A far more subtle, and potentially much more destructive way of mounting such attacks is the use of a computer virus. Computer viruses are ideal weapons not only for terrorists, but also for criminals bent on extortion, malicious computer hackers, or disgruntled persons seeking revenge.

Basically computer viruses are rogue computer programs which instruct infected computers to take unauthorized actions. These actions can range from the harmless to the disastrous. On the relatively harmless side a computer virus may instruct a computer to display an unauthorized message to an operator. An example of such a virus was known as "the cookie monster" virus. This virus would at random, bring the operations of infected computers to a halt and display the phrase "I want a cookie" to the operator. Once the operator typed the word "cookie" the computer would resume normal operation.

At the other extreme is the "logic bomb" allegedly planted into the computers of General Dynamics by a disgruntled former worker. This virus was designed to destroy the data in the General Dynamics computers used to design the U.S. Air Force's billion dollar Atlas missile system. The former employee, a computer programmer, inserted the virus program into the company's computers just prior to his resignation from the company. The program was designed to remain dormant in the system for a number of months until, at a predetermined time, it acti-

vated itself and wiped out the data stored in the computer database.

The former programmer then intended to offer his services to the company, for a substantial fee, to help reconstruct the destroyed database. The "logic bomb" virus was discovered before it "exploded" only by accident when another employee had difficulty in using the former employee's database for an entirely different matter.

Computer viruses also have military uses. Both the U.S. and Soviet defense establishments are believed to have ongoing programs aimed at developing computer viruses which could be used to cripple an opponent's vital military, and perhaps also civilian, computer networks.



An experimental highway navigation project control room in Los Angeles is completely computer dependent. Should the computers fail for any reason, millions of commuters could find themselves stranded in the largest traffic jam in history (Calif. Dept. of Transportation).

Neither the U.S. nor the Soviets will acknowledge the existence of such programs. However in a recent edition of *Signal* the journal of the Armed Forces Communications and Electronics Association, AFCEA, retired Army Chief of Staff General John A. Wickham wrote the following: "Few public records exist of attacks on military information systems. But the probability of attack remains because of the inherent system vulnerability to sabotage from enemy agents or an individual such as John Walker... Computer experts say that no leak-proof defense against computer viruses exists or can be developed in the foreseeable future. We must assume that an enemy would plan to possess such capabilities. This poses an ominous threat for any nation dependent on computers for defense. But this threat can work for the United States as well as against it. Consequently, development of effective U.S. capabilities to target tactical and strategic automation and communication systems appears to be a must for effective deterrence and for war-fighting

(Continued on page 64)

Federal Ordnance:

Springfield 1903 Service Rifle

Original bolt-action .30-06 caliber U.S. service rifles with new ordnance barrels and new hardwood stocks. . .

Staff Evaluation



These guns have new ordnance barrels made in the 1940s and kept in storage for more than 40 years and new hardwood stocks made in the U.S. and in Italy.

TOTAL production of Model 1903 and 1903A1 U.S. service rifles was about 1,295,000. These rifles were used by U.S. military personnel during World War I and in the early stages of World War II.

Federal Ordnance, Inc., of South El Monte, California, has a quantity of these outstanding bolt-action military firearms in top condition, just released from an overseas government storage depot where they were held for more than 40 years.

These weapons are ordnance refinished with new barrels dated in the 1940s and new Type C (M1903A1) walnut replacement stocks with pistol grip type rear stock.

We were loaned one of these rifles from Fed Ord and test fired it with some military specification .30-06 ball ammunition made in Colombia and

Belgium (Fabrique Nationale).

Our test sample is, as are the other rifles Fed Ord has as we understand it, the M1903A1 type with pistol grip type stock, checkered butt plate and serrated trigger. The new barrel has "U.S.M.C. 11-43" stamped on it near the muzzle along with an "S" in a circle.

These rifles have 5-round, staggered row, non-removable box magazines which can be loaded with rounds individually by hand or with stripper clips.

This is a beautiful rifle, very finely finished and extremely sturdy. This one was made by the then government-run Springfield Armory with the serial number 1024246.

According to the 12th Edition of *Small Arms of the World*, receivers of these guns made by Springfield with serial numbers below 800,000 were made with Springfield Class C steel and should not be used with stepped-up loads, but later receivers, our test sample included, are suitable for any factory loaded .30-06 round, except

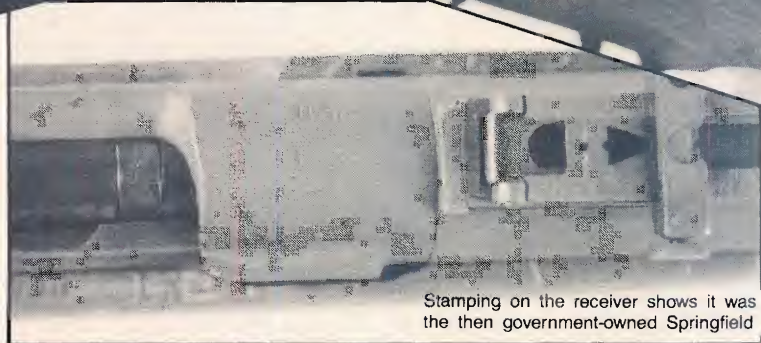
After adjusting point of aim due to sight problems, our 100-yard groups were beginning to tighten up.



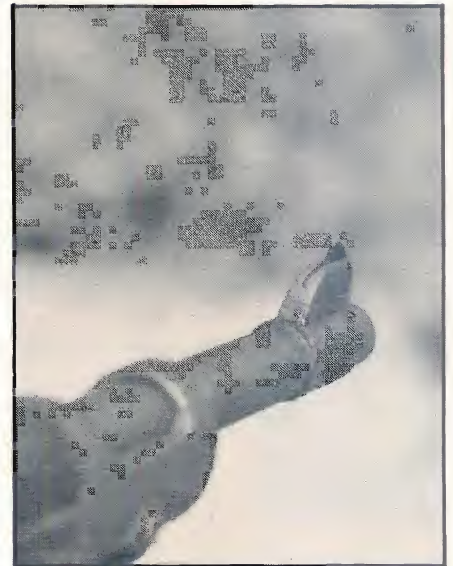
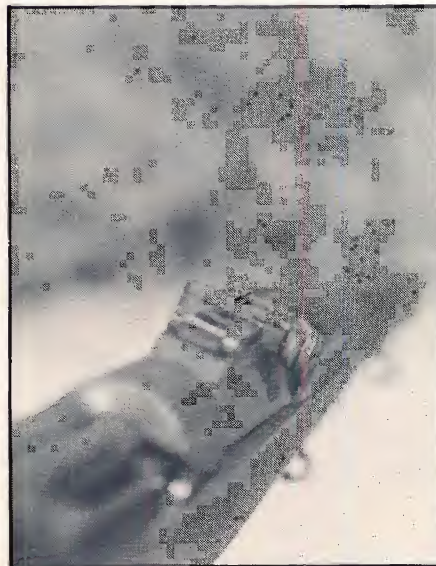
Magazine cut-off lever safety prevents bolt closing or magazine loading.



The rear leaf sight is sophisticated and has numerous settings for great distances. Leaf sight folds to reveal a V-type notch for closer ranges. Front sight is a blade.



Stamping on the receiver shows it was made by the then government-owned Springfield Armory.



proof loads (a deliberate overload to test the strength of a gun component).

The steel parts are all parkerized except for the bolt assembly. Overall length is 43.2 inches. Barrel length is 24 inches. Our rifle weighed in empty at 9 pounds, 3.5 ounces.

There are three rings on the bottom of the stock for fitting a sling. Bayonets and other accessories are available for these guns. The front sight is a blade and the rear sight is sophisticated leaf sight with aperture battle sight. This leaf sight has a number of

adjustable settings on it for distances out to what appears to be about 2,800 yards or meters. The leaf folds flat to reveal a tiny V-type notch for simplified use at closer ranges. The rifle is operated manually by turn bolt.

We test fired the Springfield using an improvised rest and firing at a half silhouette target placed 100 yards away.

Our rest was not as good as a proper rifle bench rest and this had to have had some effect on accuracy, along with our rear sight being off a fraction of an inch in windage which we could not

correct ourselves. This latter difficulty probably requires the attention of a gunsmith but should not involve any major work. The combined effect of these problems kept us from getting tight groups at 100 yards, though toward the end of our firing session, adjusting for point of impact, we were able to reduce our best 5-shots to just under 4 inches—not superb accuracy but certainly tolerable given the sighting problems we were having. No doubt we could have improved on that had

(Continued on page 42)

HOME SAFETY PRODUCTS



RADON TEST KITS: Second only to cigarettes, radon gas causes lung cancer. Studies now implicate radon in leukemia and other types of cancer. Easy-to-follow instructions. Tamper-proof canister. Accurate 3-day test. Each kit includes instructions, crush-proof mailer and pre-paid lab analysis. Confidential lab report mailed back to consumer within 10 days, by EPA RMP listed. Lab. **\$12.95.**

WATER QUALITY TEST KIT: Drinking water is not pure. Impurities can affect your health, the taste, odor and color of drinking water and the food and beverages prepared from it. Kit has 6 different tests (free chlorine, total hardness, chloramine, total chlorine, total alkalinity, dirt and rust). Each kit contains enough strips to test water 8 times. Excellent for consumers considering purchasing a water softener or water filtration system, or who have recently moved. Excess chlorine can combine with organic material to form trihalomethanes, a suspected carcinogen. Low pH increases the occurrence of lead dissolved in drinking water from brass fittings and lead solder joints. Hard water shortens the life of fixtures and pipes and may cause hot water heater burn-out through the build-up of scale. **\$9.95.**

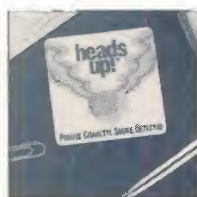


LEAD TEST KIT: Lead is toxic to humans, and especially threatening young children and fetuses. Exposure to lead has been associated with childhood learning disorders, brain damage, anemia, high blood pressure, kidney damage, miscarriage, premature birth, and cancer. Easy-to-use test detects lead in paint, dishes, solder joints, soil, toys and other household items. Each kit contains enough materials for 8 in-home tests. **\$9.95.**

CARBON MONOXIDE DETECTORS: You probably already know that you can collapse and die of carbon monoxide (CO) poisoning within a matter of minutes when exposed to heavy doses, such as from auto exhaust. But, did you also know that severe heart and brain damage can result from exposure to non-fatal levels of CO? Pre-birth exposure to CO has been linked to learning and memory defects. Flu or virus is often blamed when in fact CO poisoning is the cause. Lower levels of CO can cause symptoms such as headache, drowsiness, fatigue, nausea, vomiting, fluttering or throbbing of the heart, weakness, dizziness and dimmed vision.

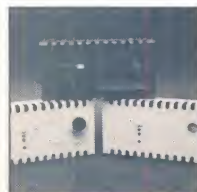


Carbon monoxide detectors: detects deadly carbon monoxide gas. Circle turns black. Returns to normal when exposed to fresh air. Instructions included. Adhesive-back. Mounts anywhere. Perfect for home, recreational vehicles, cabins, automobiles, boats, airplane, garages, fireplace, charcoal grills, wood stoves. Use with all fossil fuels except diesel engines. **Package of 3 for \$9.95.**



PASSIVE CIGARETTE SMOKE DETECTORS: Circle turns dark in presence of elevated carbon monoxide in cigarette smoke. Document exposure to sidestream tobacco smoke from cigarettes, pipe or cigar. Color scale allows interpretation of results in "cigarette equivalents" to the non-smoker. Affix to flat dry surface with adhesive backing or wear with pocket clip. Designed for single use of up to 24 hours in home or office setting. **Package of 3 for \$9.95.**

RESIDENTIAL PROPANE ALARM: Model TJC51-110 propane alarm. Gives family that extra measure of safety. Many people can't smell the odorant in propane gas due to old age, illness, colds, allergies, being asleep, etc. Compact and reliable. No messy cord, wall-plug mount. Plugs into standard 110 volt outlet. Also available in a 12-volt model for campers, boats and recreational vehicles. TJC51-12 model has dry contacts for automatic gas shut-off valve (not included). Environmentally friendly non-radioactive sensor. Extremely loud alarm. One-year factory warranty. **\$49.95.**



RESIDENTIAL NATURAL GAS ALARM: Model MEG57 natural gas (methane) alarm. Designed to detect natural gas at 10% of the Lower Explosive Level, and sound an 85dB alarm. Plugs into standard 110-volt electrical outlet with UL approved transformer. **\$89.95.**

RESIDENTIAL CARBON MONOXIDE ALARM: Model COS50G carbon monoxide alarm. Detects carbon monoxide at 50 parts per million and sounds loud alarm. Plugs into standard 110-volt outlet with UL approved transformer. **\$89.95.**

FROM HEADS UP!

BATTERY OPERATED CARBON MONOXIDE ALARM: COS200B Carbon monoxide alarm operates on 9-volt battery just like smoke detector. Low power warning. Also available in 12-volt model (COS200W) with "pigtail" for direct wiring into any 12-volt system. Will not drain battery. **\$89.95.**

TAP WATER TEST FOR LEAD (not shown): One price includes everything: instructions, sample bottle and mailer tube, plus pre-paid lab analysis by an EPA certified lab. You will receive report with recommendations within 15 days. **\$29.95.**

TAP WATER TEST FOR NITRATES (not shown): Nitrates are common chemical salts and a major source of nitrogen for plant growth. They are found in water and foodstuffs and are widely used in agriculture and industrial processes. At high levels, nitrates are thought to cause "the blue baby syndrome" in young babies. In older people, nitrates have been reported to cause hypertension and have been implicated in the development of cancer. More importantly, high nitrate levels found in drinking water is often a "marker" indicating the possibility that other more dangerous pollutants may be present. Kit includes instructions, sample bottle and mailer tube, plus prepaid lab analysis by EPA certified lab. **\$29.95.**

MICROWAVE LEAK DETECTOR (not shown): Detect harmful microwave oven radiation leaks with leakage indicator card. Lab tested reusable card. Microwave leakage can cause: skin cancer, cataracts, birth defects, temporary sterility, dizziness and headaches, blood disorders, cardiovascular problems, and central nervous system damage. Detector card shows "smile face" if unit is okay and "skull and cross bones" if radiation is leaking. **\$5.95.**



PORTABLE PROTECTION: Personal alarm protectors. Pull pin if threatened or attacked and extremely loud 128dB alarm sounds (you've got to hear it to believe it!) Alarm continues sounding until pin is replaced. Can also be affixed to purse. If purse snatcher grabs purse, pin is dislodged by wrist strap. Operates on

standard 9-volt battery. Compact size. **\$14.95.**



PERSONAL PROTECTION: 60,000-volt stun gun. Well-made, dependable unit. Operates on standard 9-volt battery. Compact and lightweight. **\$39.95.**

EMERGENCY SIGNAL: Four-minute smoke cartridge for daylight distress signal. Industrial grade smoke cartridges. Packed in plastic tubes with moisture-barrier wax seal for long life. Five cartridges per package. Heavy-duty plastic storage box keeps cartridges safe until needed. Available in white or orange smoke (**\$9.95/\$10.95**).



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- ☐ Radon Test Kits @ \$12.95
- ☐ Microwave Leak Detector @ \$ 5.95
- ☐ TJC51-110, 110-Volt Propane Alarm @ \$49.95
- ☐ TJC51-12, 12-Volt Propane Alarm @ \$49.95
- ☐ MEG57 Natural Gas Alarm (110 VAC) @ \$89.95
- ☐ COS50G Carbon Monoxide Alarm (110 VAC) @ \$89.95
- ☐ COS200B 9-Volt Carbon Monoxide Alarm @ \$89.95
- ☐ COS200W 12-Volt Carbon Monoxide Alarm @ \$89.95
- ☐ Portable Personal Alarms @ \$14.95
- ☐ Stun Gun (60,000 Volts) @ \$39.95
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Springfield 1903 Service Rifle

(Continued from page 39)



Bolt safety disconnects the trigger.



Five-round non-removable box magazine can be loaded by hand, one round at a time, or with strippers.



The fine serrations and checkering on the trigger are typical of the craftsmanship on these rifles.

had we more time to spend with the rifle.

Everything worked well on this gun. It has a very smooth and relatively light trigger pull of around 6 pounds. The rifle is fitted with two safeties. One is a magazine cut-off switch on the left side of the receiver which prevents the bolt from being closed or the magazine from being loaded.

The other safety lever on the top rear of the bolt mechanism disconnects the trigger.

As would be expected with the big,



Storage compartment in butt stock for cleaning gear.

powerful .30-06 loads, recoil is pronounced upon firing, though the relatively heavy weight of this gun helps tame the recoil and muzzle rise somewhat. We imagine that firing this gun all day would leave you with a sore shoulder, however, in firing approximately 100 rounds of ammunition through our test sample, we experienced no significant soreness.

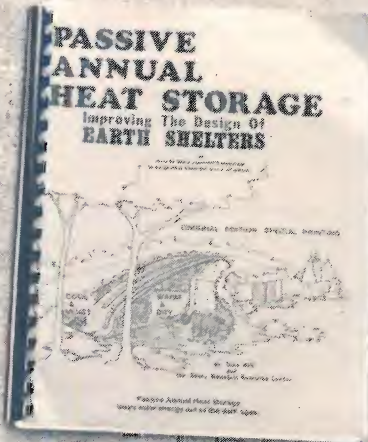
This rifle would make an outstanding game gun. It has the capacity for excellent accuracy just using its sophis-

ticated sights, once these are mastered by the user. It could also be fitted with a scope.

These rifles are offered for sale to the public for \$349.95 while they last, and we consider them to be a real bargain given their high quality parts and construction and proven record of performance and accuracy. For more information contact Federal Ordnance, Inc., Dept. ASG, 1443 Potrero Ave., South El Monte, CA 91733; phone (818) 350-4161; fax (818) 444-3875. ●

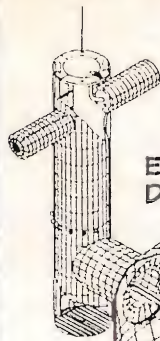
BOOKS/VIDEOS

(Continued from page 11)



Passive Annual Heat Storage, by John Hait. Survival Center, P.O. Box 234, Dept. ASG, McKenna, WA 98558; (800) 321-2900. Spiral bound, 154 pages. \$25.

Now, with **Passive Annual Heat Storage**, the natural constant temperature in the earth around a home can be inexpensively and permanently adjusted to a comfortable 70 degrees F. and then used as a giant thermal storage mass to cool your home in the summer while saving that free solar heat for winter heating. The concept is formulated on the basic design of earth sheltering, but with an added dimension. Hait has designed an insulation layering method that improves the ability of the surrounding soil to hold warmth in the winter and release it in the summer. The insulation/watershed umbrella, the key to **Passive Annual Heat Storage**, is an ingenious yet common sense device that actually protects an earth sheltered home and the earth around it from chilling cold and seeping water. The book also teaches how to provide year-round ventilation — fresh warm air all winter and fresh cool air all summer. Convection-powered heat-exchanging earth tubes save valuable heat, and purge the house of indoor pollution (even radon) without using mechanical equipment. ●



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Cold Weather Comfort

Tips for keeping warm in the wilderness...



Fewer clothes are needed during vigorous exercise. Be ready to add clothing during rest stops or mealtimes.

weaker and lose coordination. Walking on rough terrain becomes difficult and speech may become slurred. As hypothermia increases, the person loses all interest in whatever goal they were originally pursuing and becomes interested only in getting warm.

In more profound hypothermia, muscular deterioration becomes more pronounced until the victim may no longer be able to stand. Shivering stops at about 92 to 90 degrees F. core temperature and apathy takes over. Mental confusion causes the person to lose hats, gloves or leave jackets unzipped. Sometimes they will fling off their clothes. And then with increased cooling the victim becomes comatose. Heart and respiration rates slow and eventually heart failure causes death.

Without a thick layer of blubber or fur to prevent heat loss, the human body requires outside help to stay comfortable in the cold. But instead of thinking of "cold" as the "enemy," we need to think of "warmth" as the "traitor" that is forever trying to escape and mingle with the outside cold. The best outdoor clothes are designed to hold our body's heat in and only let it out to regulate the excess that is generated by vigorous exercise.

Body heat can be lost through one, or a combination of the following: evaporation, conduction, convection, and/or radiation. To better understand the processes involved, let's consider the case of Bob, a backpacker who takes the wrong trail, and ends up hiking five miles into the timberline before realizing his mistake. He is totally exhausted, sweating profusely, and wears only jeans and a T-shirt. After finding a flat rock in the shade he flings his pack off and sprawls out on the rock to rest.

The air temperature on this sunny September day is in the mid 60s, with high clouds now and then blocking the

sun's rays. When Bob was further down in the valley there were only a few wisps of wind — hardly any wind at all — but up here in the timberline slight to moderate breezes swirl around him.

Now, only minutes after unstrapping his pack and stretching out on the rock, he begins to shiver. All four cooling processes are working on him at the same time.

Evaporation of sweat kept Bob comfortable as he lumbered up the trail with the sun beating down on him. Now, with his heat generating machine only in idle, evaporation continues to suck heat away. For every liter of sweat that evaporates off his skin, 580 kilocalories of heat are removed from the body — that's about as much heat as a person produces in an hour of strenuous activity.

While Bob lies on the cold granite rock, conduction is sapping heat away little by little. This method of heat loss may not be as fast as evaporation, but it does take its toll. Conduction occurs when the energy of hot molecules is transmitted by collision to



Drink plenty of fluids. Dehydration can aggravate conditions if hypothermia sets in.

By Scott Stoddard

THE human body is a marvelous machine, a heat generating engine that must maintain its core temperature within a very narrow range. If body temperature rises above 106 degrees Fahrenheit, the brain and other organs will fry, suffering irreversible damage within minutes. On the other extreme, with a core temperature of below 95 degrees Fahrenheit the body begins to sink into hypothermia and may lose its ability to maintain enough heat through shivering or other exercise.

Outdoor enthusiasts fight a constant battle to regulate a comfortable body temperature. Without clothing, and lacking the warmth of physical activity, most people are only comfortable when the temperature exceeds 80 degrees F. Bring the temperature down and goose bumps appear. Lower the temperature more and shivering commences.

As hypothermia sets in, the muscles cool and become progressively stiffer,

cooler, less energetic molecules. When a warm body is in direct contact with a cooler body, heat always flows to the cooler body. That's why you get burned when you touch a hot stove — your cooler temperature is not flowing into the stove — the stove's warmth flows into your cooler body. Direct contact is the key. If you are trying to warm a hypothermic person, skin-to-skin contact is best.

With the advent of micro-wave ovens we have learned that our "old-fashioned" ovens are called convection ovens. A convection oven heats food by circulating warm air continuously around the food. What happens when you circulate cold air continuously around a warm body? It depends on how fast the air is circulated.

While Bob lies on the rock his body warms a thin layer of air next to the skin. This air can be trapped in his clothes and provide warmth and protection from the cold, or it can be blown away by wind or movement. As that warm air is blown away it is replaced by more warmth drawn from the body. This circular path is called a convection current.

If the temperature in the shade where Bob rests is 50 degrees, a 10 mph wind can make it feel like it's only 40 degrees out. A 20 mph wind drops the temperature right down to a freezing 32 degrees F. Wind chill charts are based on the convection principle of cooling. Frostbite can happen when high speed winds combine with only moderately cold temperatures to sear the flesh.

Wind actually attacks us in two ways: through convection by robbing us of the warm air layer next to the skin, and also by dramatically increasing the evaporation rate. Wind protection can have a tremendous effect as you struggle to regulate comfortable temperature.

While Bob was trudging up the trail he was being warmed not only by his body's heat generating engine, but also by radiation being emitted directly from the sun and by light bouncing up from the bright reflective rocks along the trail. The human body too, although not as intensely as the sun, radiates energy known as infrared "heat" waves. Out in the open, when the air is still and you are reasonably dry, radiation can account for two thirds of your heat loss.

Most of this heat pours out of your head because great volumes of blood pass just under the skin with little or no natural insulation. As soon as Bob



In order to have sufficient fuel to burn, you must eat. It's important to add extra calories and eat more often when traveling in the cold.

sat down in the shade he lost the sun's warming effect and he himself started radiating heat into his colder surroundings.

In Bob's case he could immediately reverse this dramatic four prong attack of heat loss by stripping off his sweat soaked clothes, putting on a few thin layers of dry clothes including a wool cap and windjammer, stepping out from the shade and into the sun, finding a wind-protected spot of ground, and sitting on a piece of closed-cell foam and not the cold hard ground.

The Best Clothing to Wear — Certainly a large down-filled parka will keep you warm and protect you when temperatures are below freezing. But what happens when you attempt to wear that parka during a vigorous climb up a mountain? In a few minutes the sweat will be pouring and the parka will come off. Then you'll be back to freezing as the sweat evaporates off your skin. To avoid these extremes you can regulate your temperature by using the layering method.

It is useful to classify clothing into layering categories according to their principle function: (1) the underwear layer for maintaining a comfortable climate next to your skin; (2) the insulation layer for keeping heat in; and (3) the shell layer which protects against wind, rain, snow and sun.

The best materials for the underwear layer are synthetics. What about those cotton-waffle long johns stashed in your drawer? In most situations cotton is the worst material for winter underwear and should be avoided.

All fabrics hold water by surface tension. Cotton, however, actually absorbs water into its fibers and when it does, it loses all of its resiliency. That's what makes wet T-shirt contests so popular. Wet cotton fabrics collapse and cling

to the skin forcing all the water the fabric is holding to evaporate directly off the skin — not good in the wintertime!

New synthetics are constantly being developed but they share many of the same characteristics. Their main feature is the ability to wick moisture away from your skin. This wicking process subtracts moisture without subtracting heat the way evaporation does. Synthetics also dry very fast and won't cling to the skin when wet. Polypropylene underwear was the pioneer in this field. Some of the more advanced materials used today are: Capilene by Patagonia, Drylete used by Hind, and Thermax made by Dupont. The North Face has a fabric called NTS (Next to Skin), made of 95 percent polyester and 5 percent Lycra.

For the insulating layer you can use a few wool sweaters, a Pendleton shirt, or even a down-filled vest. Even though wool absorbs water like cotton, it does not totally collapse when wetted, so it still provides insulation. Goose down, on the other hand, loses all insulation powers when wet. Down parkas are best used for inactive times around camp and when temperatures are below freezing.

As with underwear, the synthetics are gaining popularity over natural materials for the insulation layers. Malden Mills produces Polartec fabrics, a fleece-like material that dries quickly, provides warmth and takes repeated launderings. It's also known as Polarlite and Polarplus.

Another synthetic that works very well is Retro Pile by Patagonia. This thick fabric provides lots of insulation and combined with a good shell layer, will keep you extremely comfortable.

For best temperature control, stick to several thinner layers of insulation.

Cold Weather Comfort



An improvised lean-to can be made using a poncho, space blanket and nylon line. Tape the space blanket to the poncho to reflect heat back onto you.

Outer layers may have to be bought in larger sizes to accommodate the additional bulk of all your inner layers. Otherwise the layers may squeeze together, reducing their insulation properties and effectiveness at trapping warm air.

The shell layer is your main defense against wind and rain. Depending on environmental conditions you may want to go with a totally waterproof rain outfit including rain pants or chaps. Gore-Tex shells are made of Space Age materials that are water repellent yet "breathe" so trapped moisture inside can escape. These materials can be very expensive though.

When dealing with the shell layer, ventilation is the big problem. If you totally block out the water from the outside, you have problems with inside sweat and vapor not getting out. Many good shell systems contain zippers and vents to help with ventilation problems. Just remember that if you are getting too warm, one of those inside insulation layers may have to come off.

Vapor Barrier System — Using a vapor barrier layer (VBL) is a fairly new way of reducing the amount of moisture that evaporates off your skin. This system will stop fully 15 percent of your heat loss, yet is one of the lightest layers you can wear — only about eight ounces for a VB shirt, pants and socks. Designed to be worn next to the skin, and usually made of waterproof coated ripstop nylon, a vapor barrier works best during sedentary periods

when you are not likely to sweat. Otherwise it can get to be a sauna inside! If you don't like the feel of the VBL next to your skin, you can wear a thin synthetic layer underneath. Many people say that a VBL is too warm for temperatures above 40 degrees. It really proves its worth, however, when temperatures dip well below freezing.

You can improvise a VBL vest by punching head and arm holes in a large plastic garbage sack. VBL socks can be made from plastic bread bags. A sleeping bag VBL liner can be made by duct taping together a sheet of black plastic available at your local garden nursery. More permanent items can be sewn together using coated ripstop nylon. If you can't find a supplier in your area, call REI (Recreational Equipment Inc.) at (800) 426-4840.

When dealing with all of these clothing layers, don't forget your head, hands and feet. Since your head radiates heat like a light bulb, trap that heat in with a wool knit cap or a synthetic fleece balaclava. For hands, don't go out and buy an expensive pair of ski gloves. They may be warm when you are pounding down the mogul field, but nothing beats a warm pair of mittens. Use the layering system here too. An inner layer for wicking moisture and providing insulation, an outer layer for wind and water protection.

Some of us seem to constantly have cold feet. It can be 72 degrees out and our feet feel like ice. I have found that using insulation, insulation, and

more insulation is the only way my feet will stay warm. Two pairs of socks and a pair of waterproofed leather hiking boots just doesn't cut it in the snow. My feet require double Thermax inner socks, thick wool outer socks, and Sorel-type boots with thick wool felt liners to stay warm.

Besides not getting enough warm blood down to the toes, conduction is the big enemy. My thick leather hiking boots would freeze hard as ice and then simply draw away all my feet's last bit of heat. If you are snow camping, try making a pair of snow booties. Use a thick coated nylon material for a shell and line the booties with closed-cell foam on the bottom and open-cell foam on the sides. A simple draw string can be sewn in the top to keep the snow out. These are nice to wear around camp and are warm as can be. If your feet get cold add more foam insulation.

What to Put Into Your Body — Moving about in a winter environment is more difficult and takes more energy. Crunching through snow or just fighting off the cold can cause the body to demand more calorie intake. If you're

Synthetic fleece fabrics like Patagonia's "synchilla" dry fast and provide good insulation.





not performing jumping jacks to increase heat production, the body will automatically kick in the shivering reflex, causing the muscles to twitch and burn calories. To keep that heat production from falling, you need to eat. Eating a meal increases metabolism by about ten percent for the next four to six hours. You should eat at least that often. Many experienced travelers eat every two hours or so.

For every ounce of protein or carbohydrates you consume you get about 110 calories. For fats, that's about 250 calories per ounce. It may seem easier to increase fat intake if you're worried about how much food you can carry in your backpack, but fatty diets are bad for your long term health and quickly become unpalatable.

Carbohydrates will digest faster than fats, providing energy a lot sooner. Try making your own trail mixes by including cereal grains, nuts, and dried fruit. Munching on trail mix can provide a steady stream of calories for increased winter demand. For longer trips you'll need to combine protein, fats, and carbohydrates to get adequate vitamins and minerals as well as calories.

And don't forget water. Although dehydration doesn't directly cause hypothermia, it can greatly aggravate its effects. If you don't drink enough water, the blood becomes thicker and

(Continued on page 69)

Stake out the back of the lean-to using improvised stakes made from sharpened sticks.



Clear the area of materials before building your fire. This photo shows the beginning of a tepee fire lay.

Self Sufficiency:

Greenhouse Gardening

'One of the ways a person can extend the useful production of a home garden is the greenhouse' . .

Newly constructed greenhouse. Dark coloring under plastic is felt insulation.



Interior view of a semi-permanent structure.



Thousands of greenhouses dot the Korean landscape providing food late in the growing season.

By Charles R. Evans

ONE of the primary concerns of survival-minded people is the reliability of food sources.

There are many ways to insure a supply of food: freeze dried, nitrogen packed, retort pouches, home canning and others. Where space and time permit many people also raise a home garden.

Canned and preserved food can rarely compete with fresh raised produce in terms of taste and nutrition. Unfortunately the short growing season in many parts of the country limit the amount of home grown food that can be raised to supplement purchased or stored food.

One of the ways a person or group can extend the useful production period of a home garden is the greenhouse. These structures include designs ranging from coldframes, used to start plants for transplanting, to large permanent structures where plants are grown year round.

In Korea, where I served in the U.S. Army, huge amounts of foods are raised in greenhouses and I was constantly amazed at the ingenuity of design and construction. When I arrived in the country in February 1990 one of the first things I noticed was thousands of these structures dotting the landscape. Even though it was freezing cold and there was snow on the ground, plants were flourishing inside.

The materials and methods of construction seem limited only by the imagination and funds of the owners. I have seen everything from metal conduit and PVC pipe frames, which can be removed during regular growing season, to elaborate, permanent wooden frame construction with insulation and heating systems. In some of the larger operations there are even living quarters built in and though they are not luxurious they appear to be comfortable.

In addition to starting seedlings and extending the growing season a greenhouse can have other benefits. By attaching a well constructed, energy efficient solar greenhouse to an existing home some of the warm air from



Mini-greenhouses inside larger structure give extra protection to plants.



Greenhouse with plastic removed showing simple construction.



These greenhouse type structures are being used as temporary housing for flood victims.

the greenhouse can be ducted inside to help cut heating cost.

By installing a thermal mass storage system the excess heat from the day can be released slowly during the night or on cloudy days to avoid drastic temperature changes. Many of the greenhouses in Korea have black mesh covers to make them warmer and felt insulation to hold in the heat.

The location of the greenhouse will dictate what type of plants can be grown for food, although just about all plants will grow year round some do not do well in late winter. Your local county agriculture extension service will have information on greenhouses and most nurseries will be happy to give information to novices.

One of the best sources for information is the public library, even the smallest library usually has one or two reference books on greenhouse gardening.

If you decide to build a greenhouse first decide what type you want, cheap and semi-permanent or a more expensive permanent solar structure. If you decide on the latter check building codes and ordinances before starting construction. If you are adding it on to your house you may have to get a building permit before you start.

Once you have decided on what type construction you want, call around to building supply houses and get the best price for your materials. If you are not too concerned with appearance check

wrecking companies or used building material dealers, I have obtained excellent material at cut rate prices by shopping around. These are also one of the best sources for glass which is a major cost if you go with a permanent type design.

If you take the time to research and carefully plan your design you should be able to construct a structure that is pleasing to the eye, energy efficient and will be an asset to your home or retreat.

With the hard economic times we are experiencing, this is one way you could cut heating costs, improve your nutrition, stretch your garden's growing season, and just have a nice place to escape the doldrums of winter. ●

Staff Evaluation

DESIGNED by custom knifemaker Walter Brend, the Benchmade Brend Combat Folder was introduced late last year. It was an instant hit with knife users.

This knife is well thought out and constructed of the best materials. The 3½-inch ATS-34 premium high carbon stainless steel blade is slightly more than ⅛-inch thick and made for penetration. It's reverse curve shape and keen edge also provide great cutting performance. There is a thumb-opening button on the left side for one-handed opening.

Twin stainless steel liners protect the blade when closed. The bottom liner acts to lock the blade open and also has a ball detent which provides a back-up hold-open function to delay closing for safety. A little pressure on the blade spine is all that's required to close the blade but the ball detent also slows closing, again for safety. Opening requires even less pressure and the knife can be snapped open in an instant.

Overall length open is 8 inches. Closed the knife is 4½ inches long.

Handle scales are sand blasted anodized 6061-T6 aircraft grade aluminum. The sand blasting provides a sure grip. Rubbing the scales will actually remove a tiny bit of skin from your fingers.

Weight is just about 5 ounces.

The Brend Combat Folder comes with a black nylon two-way (horizontal or vertical) belt sheath with hook and loop closure flap.

The knife is ½-inch thick.

We found this knife to be exceptionally well designed and well built. It works smoothly and efficiently, and it's razor sharp. Benchmade offers this knife with its "Life Sharp Guarantee." They will sharpen its original blade for life free. Contact Benchmade for details.

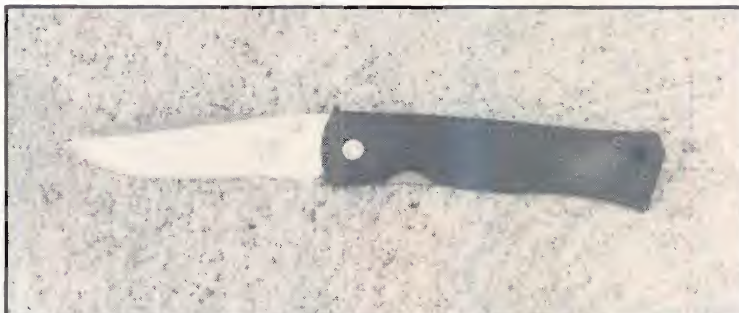
Suggested retail is \$129.95. Available at knife dealers nationwide. For more information contact Benchmade Knife Co., Dept. ASG, 15875-G S.E. 114th St., Clackamas, OR 97015; phone (503) 655-6004 or toll free 1-800-800-SHARP. ●

A tiny ball detent in the lower liner lock provides a slight resistance to movement of the blade for safety.

Benchmade:

Brend Combat Folder

Top-of-the-line liner-lock utility/combat knife . . .



The Benchmade Brend Combat Folder is 8 inches overall with a 3½-inch ATS-34 premium high carbon stainless steel blade.



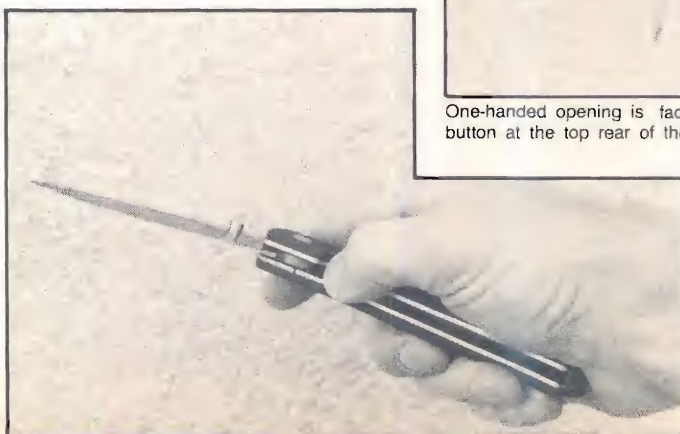
The left liner locks the blade open.



The knife comes with this two-way black nylon belt sheath.



One-handed opening is facilitated by the thumb button at the top rear of the blade.



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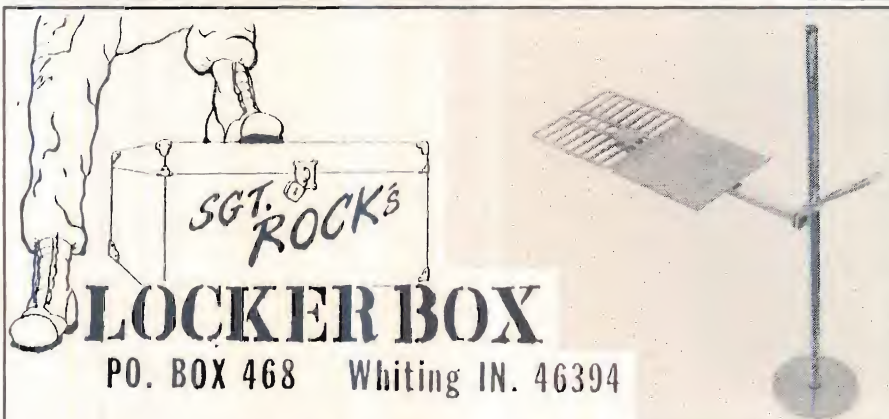
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A quantity of 36 Gunny Ragg Combo Packs. Gunny Ragg Products 1027 Elk Street, P.O. Box 2696, Dept. ASG, Rock Springs, WY 82902; (307) 362-7626. Each combo pack contains a two ounce bottle of "Gunny Ragg PTO" penetrating oil type powder solvent containing Teflon. Gunny PTO works well with 0000 steel wool for lead removal. Another item in the pack is "Gunny Ragg" a 100 percent cotton flannel rag impregnated with a light Teflon bearing solution. A one ounce bottle of "Gunny Lube," a high-quality petroleum based oil with Teflon, is also included and is ideal for keeping blueing rust free. Each combo pack comes in a resealable plastic bag that will fit in any small gear bag or case. Retail value is \$225.

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Prize No. 1

The MBK-9HPC semiautomatic pistol from K.B.I., Inc., Dept. ASG, P.O. Box 6346, Harrisburg, PA 17112; (717) 540-8518; fax (717) 540-8567. Made in Hungary by FEG and imported by K.B.I., this handsome and compact recoil-operated handgun has a design based on the world renowned Browning Hi-Power semiautomatic pistol but with important improvements. Most particularly, it is a double-action semiautomatic pistol with a slide mounted safety decocker which safely lowers the hammer on a live round in the chamber while at the same time blocking contact between hammer and firing pin. Introduced in the U.S. in 1991, this gun is all steel except for the hand checkered walnut grips and has a blue finish. Magazine capacity is 14 rounds. Sights are a fixed U-notch rear and front blade. Sight radius is about 6 inches. Weight is 35 ounces with empty magazine. Overall length is 7½ inches. Barrel is 4 inches. Height is 5½ inches. Width is about 1½ inches. Includes gun, two magazines, cleaning rod and owners manual. Retail value: \$400.



Prize No. 3, 4

Prize No. 3 is the Recon Scout combat knife from Special Projects, a division of Cold Steel (for information, a free Special Project catalog or orders call toll free 1-800-255-4922). A superb new combat bowie, the big, tough, razor sharp and versatile Recon Scout has identical Carbon V steel, heat treatment and construction to the world-famous Cold Steel Trail Master, but with a handsome baked-on, non-reflective black epoxy coating and high cantled (upward curving) edge buffed to a keen sharpness. U.S. and allied troops carried the Recon Scout during Operation Desert Storm. Weight: 15 ounces. Overall length: 12.5 inches. Blade: 7 inches long, 1.25 inches thick. Handle, black checkered Kraton rubber. Full tang is 5/16 inch thick.

Comes with handsome, ambidextrous black nylon sheath suitable for belt or web gear. Value: \$130. Prize No. 4 is the Mamba 7-L, a lighter, more compact version of the original Mamba combat knife from Blackjack Knives (Dept. ASG, 1307 W. Wabash Ave., Effingham, IL 62401; 217-347-7700). The Model 7-L was developed after hundreds of requests for a smaller version of the famous Mamba. The construction of the full tang knife is 400 series high carbon stainless steel at 55-57 Rockwell. Hand ground convex edge is razor sharp and easy to maintain. Overall length is 13 inches. Blade is 3/16 inch thick and 7 inches long. Weight: 12.2 ounces. Handle is black Kraton rubber. Comes with high quality black Hunter Leather sheath. Value: \$80.



Prize No. 6

72 Hour Waist-Pak with Solar Dynamo AM/FM radio. NITRO-PAK Preparedness Center, 13309 Rosecrans Ave., Dept. ASG, Santa Fe Springs, CA 90670; (800) 866-4876 or (213) 802-2635. Designed for easy carrying of survival supplies in the event of evacuation or disaster. Provides one person with important items for three days including food and water. Contents include: 2400K ration bar, nine water pouches, emergency space blanket, poncho, flashlight, first aid kit, survival candy, 15 function knife, heat packs, tissue packs, wet wipes, refuse bags and a Solar Dynamo AM/FM radio. Retail value is \$64.95.



Prize No. 5

Four Belt Bag Holsters from KG Products (Dept. ASG, P.O. Box 1555-A, Inyokern, CA 93527; 619-377-3292 or toll free 1-800-944-7717). Included are one #3 size black leather holster (\$49.95—will hold Ruger SP 101, 2½" S&W K frame, S&W 6900, 3913, 4516, 4013, Star PD, Colt Officers ACP, Glock 19), two #2 size nylon holsters — black and fuchsia and gray and electric blue — (\$19.95 each, will hold 2" S&W RB J frame, PPK, PPKS, Colt Gvt. 380, STARFIRE 9mm and most stun

guns), and one solid navy color #4 size nylon (\$24.95, will hold Colt Commander, Ruger P85, SIG 226, Beretta 92 Compact, Taurus Compact, S&W 39 & 59, Glock 17, Browning HP and most 3" RB revolvers). The Belt Bag Holster allows you to carry concealed anytime, anywhere (check on legality in your area—you may need a license to carry concealed). You can carry your money, valuables, MACE, Stun gun or a handgun in the false back. Grab and rip open the Velcro and snap closure for instant access. Carry other items in the zippered front pockets. Total value of this prize: \$115.



By
Bennett Viken
and
Robin Sutton

Mass Wasting:

Landslides

LANDSLIDES have always posed a hazard to humans and property.

A Java slide in 1006 A.D. impounded a lake, flooded a densely populated area and destroyed the Hindu cultural center of Java. China's 1920 disaster in the Kansu district — where a massive landslide of thick loess deposits of the type of windblown topsoil that comprises eastern Nebraska's rich farmland — killed 200,000 people.

Appropriately, the technical term for landslides and related phenomena is "mass wasting." To a large degree the cause of mass wasting is gravity, the attraction of smaller particles to a larger, denser, lower mass. Landslides are possible when the particles that make up the land lose the cohesiveness that has held them in place.

There are many clues to landslide danger. Any area with hills, may be subject to some form of mass wasting. In dry rock areas, cracks and fissures in the rock show a weakness that may lead to rock falls or other forms of wasting. Any sign of previous landslides — whether new and clearly visible or old and partially covered by plants — means that conditions are right.

Soil types are one important condition that can lead to slides. Clays are notorious for sliding when wet. But any loose, non-compacted soil that overlies a harder, or slippery material could slide with enough precipitation. Rain, snow and water — runoff, irrigation, river or stream — can cause an increased risk of landslide.

Other natural factors that can increase the risk of soil movement include seismic activity from earthquakes and volcanoes; areas bordering on the Pacific in the "Ring of Fire" are sites of much mass wasting. Human activities also cause landslides: clearing the land of trees, shrubs and deep-rooted native grasses; paving areas and covering over soil; cutting off the toe of a slope; even moving heavy equipment across unstabilized soil — all of these can trigger landslides.

Although what we think of as "the land" may appear to be a solid mass, it is actually a conglomeration of separate particles. At a very simple level, we can consider the earth to be comprised of rocks and soil, which is

'Millions of tons of rock and soil can plunge down slopes at speeds of more than 100 miles per hour' . .

Photos Courtesy of the National Geophysical Data Center.

Two slumps on Southern California's Pacific Palisades.



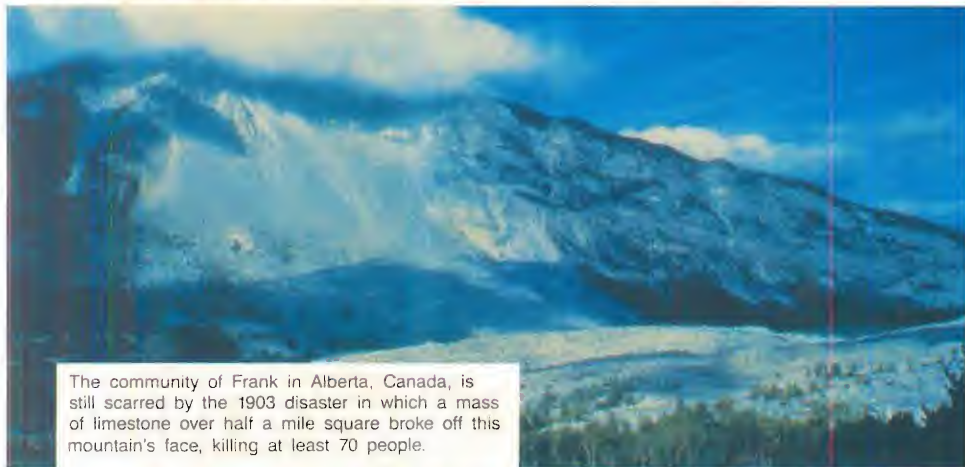
made up of eroded rocks. Rocks are classified as igneous, metamorphic or sedimentary. Igneous rocks, formed by the cooling of molten lava and magma are associated with volcanic activity. Although volcanoes may deposit pyroclastic materials around their vents in a cone, the tendency for molten lava is to form a flat flow of rock. Sedimentary rocks develop when materials, sediments, precipitate out of a solution and then dry as flat strata. Metamorphic rocks are sediments transformed by heat, pressure and chemical

action. In brief, rocks are sediments transformed by heat, pressure and chemical action. In brief, rocks tend to lie in horizontal planes. Hills and valleys are developed either by movements that tilt the flat beds of rocks into slopes or by erosion wearing through layers of rocks, as when a river cuts its course across the land.

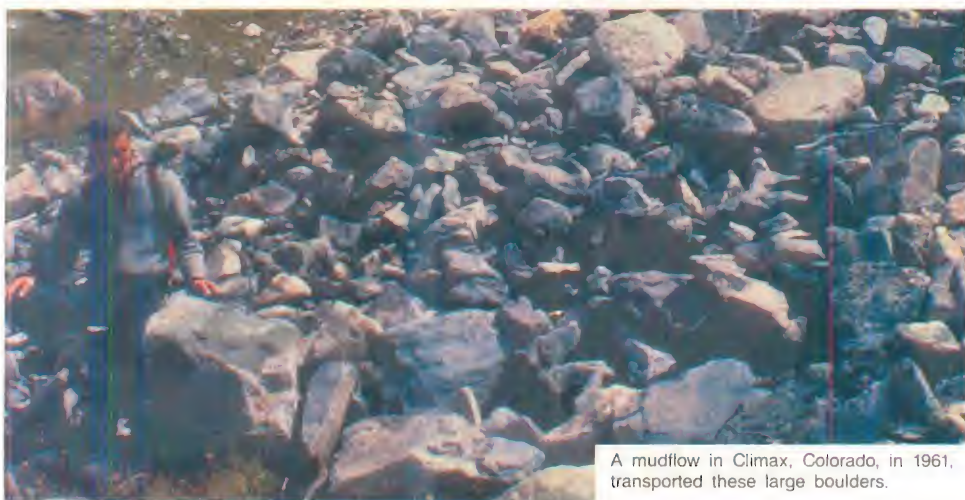
If the rocks existed in an atmosphere where they were not affected by wind, rain or temperature, they would retain the hard, cohesive texture that makes them rocks rather than soil.



The head of a land slump in the Black Hills.



The community of Frank in Alberta, Canada, is still scarred by the 1903 disaster in which a mass of limestone over half a mile square broke off this mountain's face, killing at least 70 people.



A mudflow in Climax, Colorado, in 1961, transported these large boulders.

However, these forces do erode rocks, break them apart and make their cohesion fail on certain slopes.

Picture the land as a three dimensional puzzle fit together with minute grains of dirt. As long as the grains are held together — compacted — the soil is stable. But if something loosens the structure, the pieces fall apart.

The most dramatic disrupters of soil cohesion are also the most obvious. Volcanic activity is violent and often results in the emission of materials that themselves are destructive. But

they are also responsible for one of the most cataclysmic of landslides, the "lahar," the debris flow which rapidly denudes the volcanic slope down which it slides and which may be far worse when volcanic heat melts ancient glacial ice. Much of the worst destruction associated with the 1980 eruption of Mt. St. Helens in southwest Washington was caused by the lahar which scoured the Toutle River valley and destroyed 123 houses in Toutle itself. But the absence of glaciers is no protection from volcano-caused mudflows: most volcanic eruptions are accompa-

nied by heavy rainfall. The flowing mass of ash and pyroclastic debris that followed the eruption of Italy's Mt. Vesuvius in 79 A.D. buried the town of Herculaneum so completely that it was lost to the world for centuries.

Earthquakes can also cause mass wasting. In most cases the physical jolt is sufficient to loosen the cohesion that has held rocks and soil in place. In 1959, the Hebgen Lake earthquake in the Madison Canyon of Montana, near Yellowstone, caused a massive rockslide of more than 21 million cubic yards of rock. Within a minute the mass of rocks slid across the valley and up the canyon's opposite wall. A popular tourist destination, the area had attracted a number of visitors when the earth quaked on August 17, 1959. Fortunately, only 23 were killed in the disaster.

But the causes of most landslides are far less dramatic. And, more importantly, they are more predictable, which means that it's possible to limit the losses caused by landslides if one plans carefully.

The Water Factor — Perhaps the most important factor in mass wasting is water. A little water can improve soil cohesion by "lubricating" the soil particles so they compact together more tightly wet than they do dry. If you've ever built a sand castle on the beach, you've undoubtedly experimented to find the proper level of dampness to keep your castle standing. If you add too much water to the sand — or any soil — the water lubricates the particles so thoroughly that the cohesion is destroyed and the castle's walls collapse. Pour on enough water, and the particles will demonstrate liquefaction, a process that turns the water-logged soil into a mush that acts more like a milkshake than solid ground.

Landslides and rockslides are overall the most destructive and catastrophic forms of mass wasting. Millions of tons of rock and soil can plunge down slopes at speeds of more than 100 miles per hour.

In Peru's 1970 earthquake the western part of the summit of Mount Nevados Huascaran collapsed and a rockslide 3,000 feet wide and one mile long raced down the mountain at more than 100 miles per hour to bury the city of Yungay and several nearby villages, killing 18,000 people in the process.

Landslides are generally rapid movements common on stream banks,

(Continued on page 76)

Flashlights are virtual necessities

Outdoor Hardware:

Best and Brightest Flashlights

for outdoorsmen of all types. . .

A few of the best AA-powered flashlights: (from left), Buck 4AA, Legend, Streamlight TopSpot, G.T. Price Code 4 Jr., Mini-Maglite, Streamlight Jr.



By Mac Overton

THE flashlight has come a long way since its invention as a turn-of-the-century toy, "the electric flowerpot," by Joshua Lionel Cowen (later famous for Lionel trains). It consisted of a slim battery in a tube with a bulb at one end. The tube was placed in the flowerpot to light up a plant. Russian immigrant Conrad Hubert, who had been hired by Cowen, saw a potential for the invention, and purchased the rights from Cowen. The novelty was a marketing disaster. In an effort to recover part of his investment, he took the lights from the flowerpots and sold them separately. After lengthening the battery cylinder, Hubert was able to receive his own patent for a "portable electric light." The versatile, hand-held lights quickly became extremely popular. Hubert went on to found Eveready Battery Co., a division of Ralston Purina. Eveready continues to be a major force in the portable light-

ing industry today.

Today, flashlights are virtual necessities for outdoorsmen of all types, and find constant use around the home, shop and car. In small sizes, they are likely to be found in the purse, briefcase and glovebox. Their utility is virtually endless.

Today's flashlights are the "best and brightest" ever made — since the invention of the flashlight by Cowen in the late 1800s. Today's sportsman has a wider choice of high-quality lights than ever before.

These flashlights work better, and are brighter, tougher and lighter than those of just a few years ago. While most innovations in lighting were pioneered by small, entrepreneurial companies, the big outfits have seen the light, no pun intended, and several of them now offer high-tech models.

Tough plastics and lightweight me-

tals, and bulbs of Space Age materials, combined with superior longlife batteries, give modern lights their advantages.

Today's high-tech lights can largely be traced to the development of a heavy-duty flashlight in 1967 by then policeman Don Keller.

Influential in the products of many companies, Keller now heads The Keller Co., a division of the Brinkman Corp. The Keller Company is becoming known in the crowded \$100 million flashlight market for its "Legend" flashlights. Legend features rubber-wrapped handles, a one-hand control switch with a lock-off option, and the ability to "blink" the light without a click from the switch. This feature is important to those who want to use without being detected. Legend is being sold to the upscale lighting market.

Legend products share the accolade "best" in general purpose lights with innovators like Streamlight, Laser Products, Buck (made for the renowned knife maker by Underwater Kinetics), Tekna Design (now owned by Rayovac), Pelican, and the MagLite series. Other firms offer lights for special applications, such as the NiteLite brand, designed for coon hunters.

Bulbs on the new breed of lights are krypton, quartz halogen or xenon, and are often not interchangeable. (You must buy replacement bulbs, or in some cases reflector-bulb assemblies, from the manufacturer.) For standard bulbs, you can sometimes buy a krypton replacement which will dramatically increase the light output of a standard flashlight. Once very expensive, these krypton replacements now usually cost only about twice as much as standard bulbs.

Replacement bulbs for Maglite and Brinkmann products are likely to be generally available at sporting goods counters. Other bulbs and bulb assemblies may be available only from special dealers or from the manufacturer. A bulb assembly, with the bulb and reflector made as a single unit, are likely to be expensive — sometimes 50 percent or more of the cost of the light. Those who use such assemblies claim the mating of a high-tech bulb with a computer-designed reflector gives optimum lighting performance.

I've personally used, tested, and evaluated products from all the makers mentioned above, plus many others. Most are excellent, but I'll have a few cautions for the consumer later.

Here are a few features to look for on lights available today: Water-resistance, bulb type, construction materials, fixed focus or focus-free, light size and battery size, switch type, rechargeability, and accessories.

Water-resistance — Most of the high-tech lights available are sealed against accidental immersion, and some claim to be waterproof to several hundred feet down. If you are planning to take your light underwater, though, it's best to stick with those brands specifically designed for hard duty under water, and which are sold through divers' specialty shops.

Some sealed lights are also industrially certified as safe to use in explosive environments. When you turn on a light, it generates a spark. Explosion-proof lights contain the spark in a sealed environment (the case) so it cannot ignite explosive vapors. No matter what the brand, the sealing mechanism is usually an O-ring at any joints or fittings in the light assembly.

High-tech bulb — Light from a high-tech bulb, such as krypton, xenon or halogen, is much brighter and clearer than that from standard flashlight bulbs. (High-tech bulbs generally cast a "whiter" beam than standard bulbs, which seem to have a "yellow" cast. Objects in the beam seem truer in color when in the high-tech glow. BuckLight, for one, claims true color rendition under water. I'm sure the others can claim the same. Some bulbs, like Maglite, have prongs and plug-in-like tiny tubes. Most, however, have the standard cylinder base we're all familiar with.

Having a backup is important. I've dropped my Mini-Maglite a few times, shattering the bulb into a dozen or so pieces. Fortunately, another bulb was in place in the tail cap, so the light was soon repaired. Some other brands may store a spare bulb near the lamp assembly.

Rayovac has one model with a spare bulb working off a different battery, giving you complete backup of both bulb and battery. The auxiliary bulb works off a long-lived lithium cell.

Pelican has a totally unique concept in some of its professional lights: a **spare bulb within the main bulb!** When the bulb goes out, you flip the switch to a different position, and a second filament in the bulb lights up. This

gives you time to replace the bulb without losing the utility of the light in the field. Replacement bulbs, of course, are available only from Pelican.

Materials used in construction — Aircraft aluminum and a variety of high-strength plastics are commonly used in flashlights today. Injection-molded plastics, in fact, are found on some of the cheapest and some of the most expensive lights on the market. Some makers make their lights tougher with features such as a shock-absorbing cushion of rubber. The aluminum lights are virtually indestructible. The better plastics are very tough too, but may be affected by solvents or other chemicals. I once thoughtlessly ruined a fine Pelican light, by lubricating the threads of the housing assembly with a silicone spray. Before my eyes, the housing cracked. Re-reading the instructions, I learned that silicone grease was okay as a lubricant for the housing, but silicone spray, containing a particular solvent, was expressly forbidden.

While black is the most popular color, injection molded plastics offer the option of various brilliant colors. These colors, molded through, will normally not fade with long-term exposure to sunlight or chemicals. Aluminum can be anodized in a variety of colors, too, but scratches, exposure to acids, and sunlight, will often bleach out the color.

Those using plastic casings point out that their products are rust and corrosion proof. Also, non-conductive plastics are safer to use where electrical hazards may exist. Users of plastic cases also claim their lights are more comfortable to the touch in hot or cold conditions. Those who work in survival situations, like police officers, prefer lights which do not reflect light. For this reason, black is immensely popular with those who need concealment.

Fixed-or focus-free — Some lights have a fixed-focus beam, which means that when the light is turned on, the beam is in a tight, concentrated spot, rather than diffused. Others can be adjusted from "soft flood" — diffused lighting — to "hot spot." Some, which are turned on by a rotation of the head, start out with the diffused flood light and proceed to the spotlight mode. Some manufacturers promote this feature, but I've found that anything except the most concentrated beam a light can put out is generally less than acceptable. (See the section on switches, below.) A light that is pre-focused — turn it on and it's in focus — is easier for me to live with than one that has

to be turned on, then focused. However, some users like the soft-flood option, for ambient light in a tent, or for lighting a path for several people.

Battery size and light size — Commonly available lights use familiar D-cell, C-cell, AA, AAA or less common three-volt lithium batteries. Number of cells can range from one to five or so. Lanterns commonly use six-volt lantern batteries. Whatever type your light uses, you are better off using alkaline cells in any size for which they are available. Alkaline batteries last two to four times as long as even heavy-duty carbon-zinc batteries. Lithium, available only in special sizes, doesn't provide much longer life in use than alkaline, but has a real advantage in storage life. Lithium can maintain up to 85 percent of its power even after five to 10 years in storage, making it ideal for survival kits in



The Streamlight TopSpot converts from handheld light to headlamp with the help of a headband.

earthquake areas, for trunks, etc.

Light size can range from tiny one-AAA keychain lights weighing an ounce or so to a massive five-D-cell assembly weighing two and a half pounds. For me, the most convenient is any of the variety of AA-powered high-tech lights in two- or four-cell designs, or compact models using two to four C-cells. The lithium-powered Sure-Fire 6P has also become a favorite, with its weight of less than five ounces and intense beam.

Switch mechanism — As mentioned above, some lights "switch on" as the head is rotated. Others may have a slide switch, a push-button, or other types of switches to turn on and off. The rotary-switch models are incredibly simple: as you rotate the head, the lamp assembly makes contact with a metal strip. In these designs, such as

Best and Brightest Flashlights

Pelican, repair of the switch is easy: you just replace the strip. Some rotate inward to turn on, while others rotate outward. A problem can arise if you are used to one type and suddenly find yourself using another type. At least one person I know accidentally disassembled a light by rotating it too far the wrong way.

Among considerations as to switch type are: how easy can people with

hand injuries or arthritic conditions turn it on and off?

How easy is it to "blink" the light? Blinking can be useful in signalling, or in giving a flash of light without identifying your position with a click.

Push-button switches are usually easier to operate, but it's been my experience that they are more trouble prone. On some lights, the switch has failed within a few days (and a few dozen cycles) after purchase. These were replaced by the dealers, but that is small comfort if it fails somewhere back of beyond.

Another alternative is a rotary switch at the butt of the light, such as used by the incredible Laser 6P minilight. This light also features a push-button in the rotary assembly for signalling.

The rotary switch on Legend flashlights can be locked in the off position, a desirable feature which can save your batteries from an accidental turn-on.

G.T. Price Co. offers a unique feature on some of its flashlights. The lights have a push-button switch in a separate module between the batteries and lamp housing. If the push-button module fails, it can be removed, and the lamp housing attached directly

to the battery casing. The lamp housing then operates as a rotary switch.

Rechargeability — Rechargeable batteries can save a lot of money over time. Especially handy are the lights which you can leave plugged into an outlet, charging all the time they're not in use. These are popular with homeowners in both urban and rural areas, and are widely available. The problem with rechargeable nickel-cadmium (ni-cad) batteries is that they can fail unexpectedly. After a long period of time, ni-cads may, without warning, refuse to take a charge. If you use any of the rechargeables on the market, it may be wise to keep a conventional non-rechargeable unit on hand. Some lights either accept rechargeable batteries, or have special recharging systems of their own.

Accessories — Some manufacturers supply a variety of accessories for their lights. These include red lens to protect night vision, holsters for belt carrying, special cone attachments for directing traffic, etc. Recharging systems for batteries are available. One maker, G.T. Price, has a mini-flashlight, the Code-4 Jr., which can be instantly switched from a white light to a red light with a flip of the lamp assembly. ●



Choosing a flashlight is no longer as easy as it once was. Aircraft aluminum, injection-molded plastics, high-tech bulbs, fixed focus or zoom—all kinds of choices are available.

AA and AAA Lights

BUCKLIGHT 4AA — As its name implies, this model uses 4 AA cells, packed in a case about as long as a typical two AA-model. This gives a full six-volt system, with a powerful Xenon bulb. I've had two of these since their introduction, and have liked their output (a brilliant white beam with true color rendition). The first model I received failed after a few days of use. A check showed the batteries were good. A call to Buck customer service confirmed that the early models had problems with a delicate bulb assembly. A mild shock could cause the light to dim, then go dead. The company which manufactures the light for Buck improved the design, and the repaired model as well as another I received, have given stellar performance. Price is moderate (\$22 retail), and the product is made in the U.S.A.

MINI-MAGLITE — The first superlight in AA size, this model has spawned many imitators, some by major companies, some by knockoff specialists from the Far East. Light output is good (up to 70 times that of similar two AA lights). While it requires special bulbs, they are widely available at sporting good stores and discount retailers. With the head removed, the high intensity bulb functions as an area light. The handle is aluminum, it is water resistant, and a spare bulb is lodged in the butt section. My Mini-Mag Lite is eight years old and still performs well. It is made in the U.S., and these are generally

available for \$12 to \$15. In keychain lights, MagLite's Solitaire is simply the best around. It uses a single AAA cell, and costs about \$10-\$12.

LEGEND 2AAA — Legend's products have won wide acceptance since their introduction a few years ago. With its pocket clip, this model makes a superior shirt pocket or purse light. The lock-off feature on the push-button switch is a definite plus. I've used one for years, before giving it to my daughter for her purse. Price is \$18-\$20, and it's made in the U.S.A. The housing is aluminum, and is water resistant.

STREAMLIGHT TopSpot — This premium 4 AA model quickly became a favorite since I purchased it in early 1991. It is unique; you can carry it as a regular light, or instantly convert it to a "head band" which will shine wherever you look. (The handle separates into two segmented sections, which, together with an elastic strap, form a headband.) Batteries are housed in the sections. This, of course, allows two-hand freedom. The entirely self-contained flashlight is constructed of lightweight plastic, and a spare backup bulb is housed inside. The bulb is krypton, it has a positive locking on/off switch, and fingertip adjustable focusing (I'd just as soon have it prefocused to a "hot spot"). The only thing wrong with it is that it is not water resistant. Price is high (\$35 retail; \$20 to \$30 from discounters), but quality and utility is high, too. It is made in the U.S.A. Other Streamlight models are also high in quality.

CODE-4 JR. — The unique feature of this small two AA light is a special design which allows instant conversion from a white light to night vision red. It is water resistant, has a spare bulb, is crafted of aluminum, and is made in the U.S.A. Price is about \$25-\$30.

PELICAN MityLite — A high-quality two AAA light, this model features a powerful ceramic magnet in the tail, for attaching to a car hood or other steel surface to free both hands. Pelican claims waterproofness to 2000 feet. The light carries as easily as a big fountain pen in a shirt pocket. The Coast Guard, SEALS and other military carry them for emergencies, and EMTs I know use them in their packs as a backup light. Housing is plastic. It originates in the U.S. On-off works by rotating the head. Price is \$11 to \$14.

GARRITY TUFF LIGHT — This company's two AA model is an incredible value. It gives a bright beam from a krypton bulb, and is water resistant. (One person I know dropped his overboard in a few feet of lake water, and found it that night because it was still glowing, a few hours after being dunked.) The selling feature of this light is its rubber armor, helping shield it from jars. The push-button switch in the butt of the first model I used failed quickly, but was replaced by a dealer. At \$5 to \$7, this light is one of the best values around. Housing is metal shielded by rubber. The lights are made overseas.

Aitor NATO Bowies

from Spain's premier knifemaker. . .

AITOR, the premier knifemaker of Spain, has completely re-designed their Models 451, 452 and 453 series of bowie-style knives.

Now hunters and other outdoors people, military personnel and collectors can choose between five models of these big blade knives. All models feature satin finish 440-B stainless steel modified with extra molybdenum and vanadium to increase edge-holding ability and overall toughness.

Each blade is diamond point tested for desired Rockwell hardness of 56 degrees. Indication of this test is shown by a control mark point on each blade. Each model blade also has file worked scallops on the top rear (spine) for a subtle custom touch.

The three models shown here are called "NATO" bowies by Aitor, though this does not refer to the military or the North Atlantic Treaty Organization. These knives are intended for use by military personnel and for other outdoors pursuits.

The outstanding bowie-style blade is supported by a comfortable one-piece dark green polydiamide (a very hard plastic material) handle with black guard and butt cap (this eliminates glare during use). A stitched black leather sheath is supplied with each knife.

The models shown are referred to as the Junior NATO Bowie (451.272), NATO Bowie (452.272) and Magnum NATO Bowie (453.272). The Junior has a 6-inch blade and 10¾-inch overall length. The NATO Bowie has a 7¼-inch blade and 12-inch overall length. The Magnum NATO has an 8½-inch blade and 13¼-inch overall length. Suggested retail prices are about \$90 for the Junior, about \$96 for the NATO Bowie, and about \$106 for the Magnum NATO.

The medium-size NATO Bowie shown here weighs 14.5 ounces and its sheath is another 4.5 ounces.

Other bowie models have rosewood micarta handles, solid brass butt caps and guards and brown leather sheaths. Aitor knives are sold through dealers nationwide. For more information contact Catoctin Cutlery, Dept. ASG, P.O. Box 188, Smithsburg, MD 21783; phone (301) 824-7416; fax (301) 824-6138. ●



The medium-sized Aitor NATO Bowie is 12 inches long overall with a 7¼-inch blade.

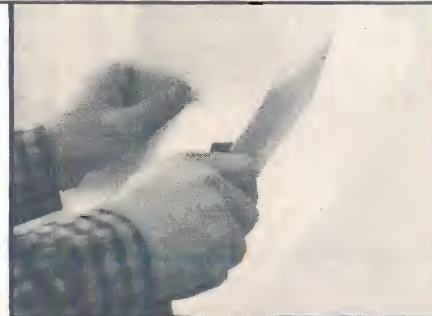


Each NATO Bowie comes with this black leather sheath with sharpening stone.

From top are the Magnum NATO, medium-sized NATO and Junior NATO Bowies from Aitor.



The distinctive bowie-style blades are strong and sharp.



Demonstrating the sharpness by slicing paper.

Lansky Knife Sharpeners

Staff Evaluation

Innovative clamp and honing stone guide arrangement insure perfectly angled, razor edges every time...

LANSKY Sharpeners utilize a unique clamp and honing stone guide system which creates a precise stone-to-knife angle with each pass of the stone over the knife edge.

This angle can be adjusted to 30, 25, 20 or 17 degrees by using the appropriate honing rod guide hole attached to the knife clamp. The higher the angle, the more durable and longer lasting the edge. The 25-degree angle is the one recommended for most knives, particularly hunting and outdoor knives.

There are several different Lansky Sharpening Kits, each one utilizing this same arrangement and procedure to ensure razor sharp and even edges on a variety of blades. There are also a number of useful accessories available to complement the kits, such as a C-clamp, mounts, a special sharpening stone for serrated edges, diamond hones, and the "Fold-A-Vee" field expedient sharpener. All these kits and accessories are available from the Cutlery Shoppe.

Each of the kits consists of a set of sharpening hones, guide rods, a knife clamp-angle selector and specially formulated honing oil, all of which is contained in a sturdy plastic case.

The Standard Kit contains three hones: the 120 coarse, 280 medium and 600 fine stones. The 120 coarse stone is the fastest cutting of the these three Lansky sharpening stones. It's used to start edges on all types of knives, large or small. The 280 medium stone is used for keeping a fine, sharp edge on all hunting, fishing, kitchen and pocket knives. The 600 fine stone is the choice for final polishing of an already sharp blade. It's recommended for touching up and finishing a sharp edge.

The Deluxe Kit contains the above stones plus a 70 extra coarse stone for super fast cutting of extra dull edges, and a 1000 extra-fine stone for the ultimate in a finishing stone. There is also a Diamond (four hone) Kit and Natural Arkansas Kit.



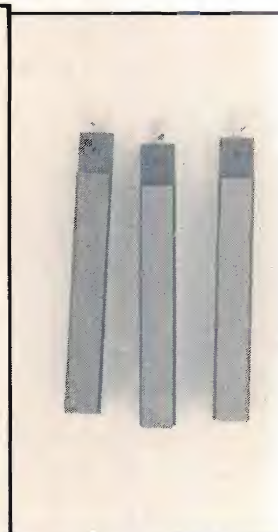
The Standard Kit with C-Clamp and mount are used to resharpen a dull pocket knife.



Versatile C-clamp with mount allows use of the Lansky Sharpener almost anywhere.

Standard Kit comes with coarse, medium and fine sharpening stones, guide rods, knife clamp-angle selector and honing oil.

The coarse, medium and fine sharpening stones included in the Standard Kit.



We tried a Standard Kit with a versatile C-clamp which allows the user to mount the Lansky Sharpening System on a stable platform almost anywhere. A Lansky mount or an improvised mount is necessary to operate the sharpener.

Following the easy, well illustrated instructions included with the kit, the

knife clamp-angle selector was mounted on the C-clamp which we attached to a counter top. A dull pocket knife blade was then clamped, by its spine at the center of the blade, in the knife clamp-angle selector and a dime was used to tighten it in place. The thumb screw at the back of the knife clamp was then used to lock the blade



The guide rod must be exactly even with surface of the sharpening stone, as shown here.

in place.

A guide rod was then attached to the coarse stone (other guide rods can be attached to the other stones at the same time as well) and the sharpening stroke pattern was begun according to the instructions drawing. You stroke toward the blade while at the same time moving slightly across it, then lift the stone and begin again stroking toward the blade at the point where the stone was lifted previously, continuing until you have worked across the entire edge. The same procedure was then begun with the medium and finally the fine stones. Then the knife and clamp were turned over (angle selector holes are identical on both sides of the knife clamp) and the entire process was repeated on the other side of the knife edge.

The result was a really sharp pocket knife with an edge like when the knife was brand new. The Lansky Sharpener is easy and simple to use and quickly puts a keen edge on a blade. This is a useful and effective means of keeping sharp edges on all your cutlery.

This Standard Kit has a suggested retail of \$35, and the C-Clamp has a suggested retail of \$20. The Cutlery Shoppe sells the Standard Kit for only \$22.50 and the C-clamp for only \$15. At the Cutlery Shoppe the Deluxe Kit is only \$31, the Diamond Kit is \$51 and the Natural Arkansas Kit is \$31.

The other accessories mentioned above are also available from the Cutlery Shoppe at discount prices. Contact the Cutlery Shoppe at 5461 Kendall Street, Boise, ID 83706-1248. For telephone orders call toll free 1-800-231-1272; for information call 1-208-376-0430; fax orders at 1-208-376-7608. ●



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Survival of the Fittest

(Continued from page 27)

The Korean War radically altered the way American servicemen were to be trained for the rigors of wilderness survival in the future. With the mountainous terrain of the peninsula, its freezing winters and broiling summers, Americans faced one of the most severe survival challenges imaginable.

Not all were fortunate enough to make it back to friendly lines, either. 7,104 Americans were captured by the North Korean and Communist Chinese forces. But capture meant anything but survival, for out of that number, 2,701 or 38 percent, died in captivity.

After the war, a special commission was created to investigate the survival and captivity situation experienced there, which resulted in the creation of the Code of Conduct, a six-article set of rules that clearly state how an American fighting man is expected to conduct himself in combat, while evading capture, and while in the hands of the enemy.

From this study also came the strong recommendation for the formation of formal schools within the Department of Defense (DOD) whose mission it would be to train personnel who were at risk of capture in survival skills that would prevent their demise while evading capture and give them the necessary skills to make it back to friendly forces under any conditions.

The Army, Navy and Air Force each formed their own school(s), and began the arduous task of preparing their men for survival under extreme conditions, ranging from the frozen arctic tundra and towering peaks of the Rockies, to the gator-laden backwaters of the Florida Everglades and the grueling environs of the Mojave desert.

Today, four DoD "survival" schools are in operation: The Army school at the JFK Special Warfare Center at Fort Bragg, the Air Force school at Fairchild Air Force Base near Spokane, Washington, and two Navy schools, one at the Naval Air Station, North Island, California, and the other at the Naval Air Station in Brunswick, Maine. In addition to the basic survival or "SERE" (Survival-Evasion-Resistance-Escape) courses offered by the schools, some conduct specialty courses by mobile training teams. Let's first take a look at the standard survival phases of the SERE courses and see just what makes them so dreaded — and successful.

The Schools — Some of the best training today's Army has to offer is done under the auspices of the JFK Special Warfare Center on the sprawling base.

A great deal of the survival training practiced there is due to the efforts of one man: the late Colonel James "Nick" Rowe, who spent five long, lonely years as a POW in Vietnam, held in a tiny bamboo cage in the swamps of the Mekong Delta before he escaped.

Colonel Rowe, a career Green Beret officer, was murdered a few years ago by a cowardly "sparrow" hit team belonging to the bandits and terrorists of the Communist Party of the Philippines' New People's Army or NPA, a 27,000 strong band. Colonel Rowe's legacy lives on at the school, where students practice survival craft in the chigger-and-snake-infested southern

was attending the Air Force's Special Operation School's Revolutionary Warfare Course.

When one of the guest speakers was asked how the Code of Conduct applied to a particular aspect of revolutionary warfare, he claimed that the Code of Conduct was largely defunct, if not dead and had no application to military life nowadays.

An Air Force SERE Instructor in the student body laid into him with a verbal onslaught that was most impressive, a tirade that quickly caught on among the remainder of the class, resulting in a quick retraction and apology by the ill-informed guest speaker.

Few will differ with the claim that the Navy's world-class survival school in Maine is one of the most demanding in its genre. Both Navy and Marine

Operation Desert Shield personnel meet a genuine survivor: a Bedouin camel herder.



pine forest.

The instructors, many of whom are Green Berets and/or Rangers themselves, devote long hours to the course, which is one of the longest such schools in the Department of Defense.

At Fairchild Air Force Base in western Washington State, Air Force jet jocks have their aircraft taken away and are taught how to survive in fierce terrain, should the enemy manage to get a missile on target. The Air Force did a good portion of the bombing during Operation Desert Storm, and many of its pilots and enlisted air crews had been trained at the school as a hedge against capture.

If you think that the Air Force is a country club and its members yuppyish, well-groomed boys and girls who parley "ValleySpeak," think again.

This school is not for the tame of heart, and the instructors take their jobs quite seriously. Some time ago I

personnel attend the school, which operates year-round out of the Navy's remote Redington Training Facility near the tiny mountain hamlet of Rangeley in the Pine Tree State's Blue Mountains.

It is this distant, off-the-beaten-path location that is at least partially responsible for the school's reputation for the strenuous. The very fact that the school's field phase takes place in a genuine wilderness area lends itself well to the idea of survival, and helps in getting the students in the proper frame of mind.

Out on the West Coast is the Maine school's mirror image at Coronado, on the Naval Air Station. Here, instead of heavily-forested mountains with the ground being snow-covered for six months out of the year, survival students experience the trying conditions of southern California's chaparral country and its associated challenges.

Water is frequently scarce. The relentless sun and scorched, broken terrain make for great rattlesnake country, and the hungry survival student must use his wits to beat the many curves Mother Nature hurls his way.

The Secretary of the Air Force is the Executive Agent responsible for all survival training conducted within the Department of Defense, regardless of the branch of service conducting the training, Army, Navy, Air Force or Marines, though the latter, despite their reputation, has no genuine survival school of its own, opting instead to utilize the Navy's two schools. His good offices take survival quite seriously, and keep a close eye on the training, demanding high standards, tough learning objectives and realistic training.

By The Book — Experts like Mr. Ralph Odom of the Navy Survival School in Maine and Frank C. Craighead, Jr. and John J. Craighead, have determined that survivors need to be proficient in five skill fields in order to stand the best possible chance of survival.

Those five fields are fire building, finding food and water, first aid, signals and shelter building. DoD survival instructors refer to these as the "Pattern For Staying Alive," and allow their students ample time to practice all five skills under harsh conditions, thus adding to the challenge and insuring the students take the training seriously.

In addition to this, the instructors stress the importance of recognizing and dealing with seven threats known as the "Seven Enemies of Survival": Pain, fatigue, fear, thirst, hunger, temperature and boredom & loneliness, which are considered one threat with two faces. All four schools harp on the fact that if a survivor can recognize these threats and deal with them with the appropriate section of the Pattern For Staying Alive, he — or she — can overcome any obstacle. Yes, in today's equal opportunity military, women are afforded the opportunity to test their mettle along side their male counterparts.

The major strengths of the DoD Survival School system lie in its respective instructor staffs and their personal survival/instructional skills. The unusually high caliber of these folks **guarantees that the student receives the very best training available in the U.S. Armed Forces, though such courses as the British SAS Survival Course in**

Wales are still considered superior by many.

The four primary DoD survival schools also conduct additional training for those in need at various locations around the globe. Some of these courses require that students have already attended a SERE course, which gives them the basic prerequisites for further training.

Jungle Environment Survival Training or "JEST": Taught by the original inhabitants of the Philippines, Negrito guides conduct one of the most fascinating and unique survival courses offered — by anyone, anywhere. Here, sailors and Marines learn how to make cooking vessels and eating utensils out of bamboo, find eels and crayfish in jungle streams, locate edible tubers, capture bamboo bats and snare jungle fowl.

Cold Weather Environment Survival Training or "CWEST": Conducted by survival instructors in Maine, the CWEST course teaches hard-core winter wilderness survival. The curriculum includes game skinning, meat smoking, snowshoeing, how to build a snow cave or snow hut, tracking, fire building and many other winter survival skills.

Desert Environment Survival Training or "DEST": The Navy teaches this one out in the Mojave Desert, and emphasizes the importance of water, signals and shelter when trying to beat the desert. Students may encounter a variety of rattlesnakes, lizards, bats and other inhabitants of the desert, and are shown how to make the best of a bad situation, even during the hottest summer months.

Tropical Environment Survival Training or "TEST": Convening aboard the island of Antigua in the West Indies and taught by survival instructors from the Navy's Maine school who are specially trained in tropical survival in addition to their other skill areas, TEST students learn about tropical survival broken down into three areas: seacoasts, forests and woodlands, and arid regions. Antigua's geography allows the student to experience all three. One day may find you eating taro tubers in the woods, digging up ghost crabs on the beach the next day, and dining on cactus the next.

The Armed Forces of the United States are bound and determined to give their members the very best chance at survival come the next war, **be it in the jungles of Bolivia and Colombia pitted against drug lords, or another desert-dwelling thug with eyes for that which doesn't belong to him. ●**

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Col. Charlie Beckwith, Former Commander of **DELTA FORCE** says, "**Lofty** has done a super job . . . All hunters, fishermen and outdoor personnel should carefully view the tape because its contents *could save one's life.*"

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Computer Vulnerabilities (Continued from page 37)



The Patriot anti-missile system performed superbly in the recent Persian Gulf War. But during the last days of the fighting, the failure of a Patriot computer allowed an Iraqi Scud missile to make a direct hit on a U.S. military barracks, killing dozens of Americans (U.S. Army).

success. While such capabilities would include weaponry to blow up facilities, they could also include the potential to insert covert channels or viruses designed to attack systems or be programmed to lay dormant until exploited during a crisis."

What Can Be Done? — Whether we like it or not we will in the future continue to grow even more dependent on what are known as "life-critical" computer systems. As our dependency grows so too will the impact of a failure, for whatever reason, of one or more of those systems. Increasingly these systems are becoming more and

more interconnected, or networked. Software which runs these vital networks continues to increase in complexity. We already entrust our lives, on a daily basis, to computers running programs which, because of their size, have not been, indeed could not ever be, completely tested.

Recently, for example, the FAA ordered the shutdown of a computerized collision warning system carried onboard some 200 U.S. commercial airliners. The order was issued after it was discovered that a programming error in the system had generated a number of false collision warnings, forcing pilots to take evasive actions to avoid colliding with planes which were not actually there.

Lawmakers have become increasingly aware of our vulnerability to the failures of key computer networks. Congress recently held hearings on the summer 1991 AT&T long-distance network failure which brought the FAA's ATC system in the Northeast to a halt. The hearings are likely to result in the speedup of a program already under way, that is intended to provide the FAA with a back-up communications capability. The new system known as Lincs, will provide the FAA with "redundant circuits to prevent a failure at a single point that could cause a broad loss of radio, computer, and telephone ties."

To combat the ever growing threat of computer viruses a number of government agencies, research laboratories, and computer equipment vendors have established "computer emergency response teams," CERTs. The

mission of these teams is to locate, isolate, and destroy computer viruses which may have infected key systems. destroy computer viruses which may have infected key systems.

The first CERT was established as a result of the infamous virus attack that was launched against the Internet system run by the Department of Defense in 1988. The virus was put into the Internet system by a graduate student who was interested in finding out how quickly such a program would spread. The virus replicated itself so rapidly throughout the system that within just a few hours some 6,000 Internet computers were crippled. Though no permanent damage was done, the cost of clearing the system and bringing it back on line was in the millions of dollars.

In 1990 a group of 11 international organizations from the U.S., France, Canada, and Australia announced the creation of an international CERT designed to combat virus attacks which cross international boundaries. The idea of an international CERT was the direct consequence of the "No Nukes" virus which infected the computers of the NASA Space Physics Analysis Network, SPAN. The virus originated in France and used various international computer networks to make its way to NASA.

The recent telephone failures, caused by faulty software are an example of the type of problems that many experts believe will become more frequent. The programs used by the newest computerized telephone call routing systems for example, are so large (more than 2 million lines) and complex, that they simply can not be fully tested.

One expert, Roger Pressman, author of the forthcoming book *Software Shock*, says that, "If you could perform 1,000 tests a second on a program with a couple of thousand instructions, it would take 3,000 years to completely and exhaustively test it."

Dr. Peter Neumann a computer scientist at the research firm S.R.I. International best summed up the problem of our growing dependence on key computer systems by noting that, "We're just dumping computers, willy-nilly, into everything. We should lower our expectations, so that we don't rely on them quite as freely as we do right now, at least in life-critical situations." ●

Examples of the length and complexity of computer programs for various systems. It is impossible to completely test programs this large. Source - NY Times 7/14/91 "The Precarious Growth of The Software Empire" by Edmund L. Andrews.

Item	Program Length
Hand-held bar code scanners	10,000 to 50,000 lines
Chrysler Electronic 4 speed transmission	17,000 lines
Motorola Cellular telephone	30,000 lines
Air Traffic Control computer	130,899 lines
Automated teller network (IBM)	600,000 lines
Telephone call-routing computer	2,100,000 lines
B-2 Stealth bomber flight computers	3,500,000 lines
Combat computers aboard Navy's Seawolf submarine.	3,600,000 lines

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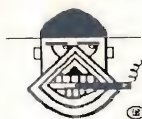
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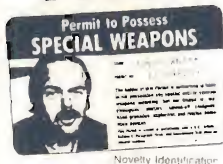
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PM2 Shotgun

(Continued from page 24)



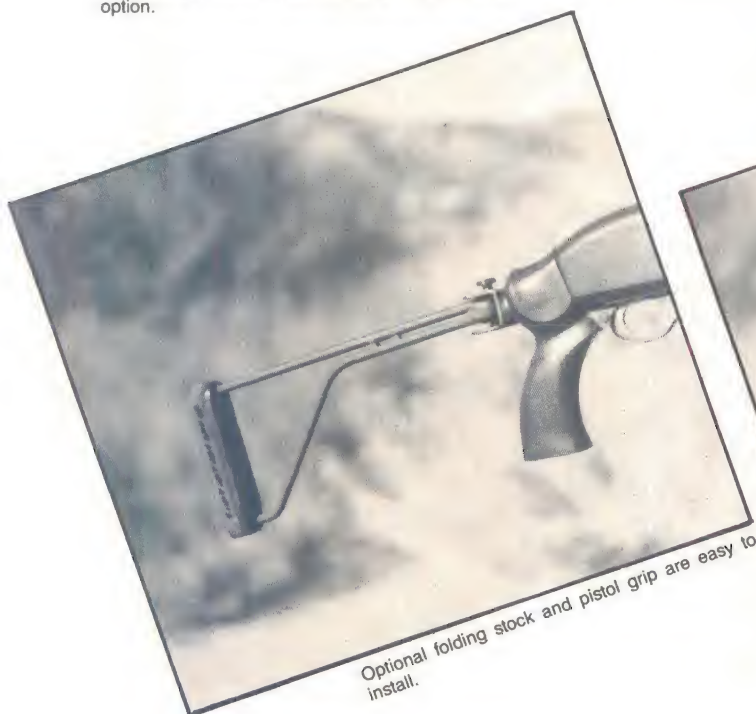
Standard brass bead front sight. EAA will fit these shotguns with popular Sage sights as an option.

PM2 Shotgun: Tech Specs

Caliber12 gauge (2¾-, 3-inch)
 Actionpump
 Capacity.....6 +1
 Magazine.....detachable box
 Lengths:
 Overall41 inches
 Barrel20 inches
 With folded stock31½ inches
 Finish...matte black (chrome optional)
 Constructionalloy receiver, steel
 barrel & bolt, wood fixed stock,
 optional steel folding stock,
 rubber fore arm
 Weight empty6.81 pounds
 Price, suggested retailabout \$500
 ManufacturerATIS, Italy
 Importer ..European American Armory
 Dept. ASG, P.O. Box 3498
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The cross-bolt safety.



Optional folding stock and pistol grip are easy to install.



The magazine feeding system allows rapid reloading and is completely reliable.

with black stock and fore arm on the Model PM2NC. Available as accessories are a steel folding stock with thick rubber butt pad, pistol grip, sling and extra magazines.

We were loaned a sample PM2 in black finish by EAA along with accessory black plastic pistol grip and steel folding stock and extra magazine.

We found the gun works well and reliably with any of the Remington and Winchester loads we fired in it. These included 2¾-inch and 3-inch Magnum loads of OO Buckshot, slugs, #4 and #2 shot, BBs and #7½ shot.

Weighing less than 7 pounds empty in standard configuration, the PM2 is lightweight and easy to handle. With the folding stock attached overall length is about 31½ inches, making the shotgun considerably more compact than with fixed stock which brings overall length to 41 inches.

The magazine feeding system works perfectly and the box magazines are not a hindrance in handling this weapon. During all test shooting there were no malfunctions experienced. The key advantage of the magazines is, of course, a rapid reloading capability.

With extra magazine it's possible to fully reload the PM2 much faster than even with speed loaders. This gives the operator a distinct advantage in firepower, particularly in certain law enforcement situations and in competitive shooting matches.

The PM2 carries EAA's limited lifetime warranty against defects in material and workmanship, including parts and labor.

We find the PM2 to be a first-rate shotgun with real versatility for a variety of uses. ●

SURVIVALIST DIRECTORY

THIS IS A CONFIDENTIAL listing of survivalists who wish to become known to others of like mind. *American Survival Guide* will accept properly coded mail and forward it to the coded addresses without charge. *American Survival Guide* accepts no responsibility for the contents or results of these confidential communications. Mass mailings are not permitted.

ASG 0201

Bay Area California. Group forming in the South Bay. Need survivalists who want to contribute to a team. Confidentiality assured. Please no gays, serious survivalists only.

ASG 0202

Northern Central Washington. Christian oriented female with 2 1/2-year-old daughter desires contact with like-minded males for survivalist training. Need others of strong beliefs for companionship and correspondence from WA, ID, B.C. Canada. Recently relocated to rural country town. Personal male instructor of extreme seriousness is sought. No drug, gay or pro-communist need waste my time. SASE for immediate reply.

ASG 0203

Northeast Arkansas. 26-year-old male, ex-Army security officer. Seeking correspondence and exchange of information from individuals or organizations on survival and many other topics. All serious inquiries answered.

ASG 0204

Iowa/Illinois. Group forming. Especially wish to make contacts with individuals and groups in the midwest, but everyone everywhere welcome to write. Wish to exchange info and ideas with all, beginners/women welcome.

ASG 0205

Southwest Missouri. Partner wanted to help build a self sufficient mini-farm through intelligent use of nature, wind, solar, and wood heating. Comfortable and healthy living should be achieved at low cost. I'm a six foot SWM, 185 lbs. and never married. Jesus's forgiveness and the fruits of the spirit are all that are needed to be compatible.

ASG 0206

Southeast Texas. I am a 17-year-old white male seeking information on survival techniques of all types, hand-to-hand combat techniques, firearms, and home-made explosives. Also seeks someone to openly express views to, and to listen to the views of others. Please no gays, addicts, far out religious types or extremists.

ASG 0207

Ozarks. Rural Nebraska family wishes to relocate to Ozarks. Wishes to make contact with those of like mind. We are dedicated, serious, and self sufficient. No gays, commies, fence straddlers, magpie pacifists, bankers, lawyers, judges, feds or any other two-legged dogs need respond.

ASG 0208

Kansas/Arkansas. My son and I are very much interested in getting in touch with people with the same goal — surviving when things get really bad (economic collapse or nuclear war). We can exchange ideas on how to make survival easier and hopefully we will be able to form survival groups. No gays, commies, klansmen, or crazies.

ASG 0209

Jacksonville, Florida. Looking for serious survival-minded individuals from this area and nearby area. All letters will receive a response.

ASG 0210

Pensacola, Florida. Survivalist biker would like to hear from other survivalists and bikers all over the world.

ASG 0211

Western Pennsylvania. My son and I wish to join a survivalist group who will accept us. Willing to relocate. Some military training. Willing to learn. Will answer all groups.

ASG 0212

Connecticut/Vermont. Existing self reliant families looking to expand with same. Interests include foraging, retreats, camping, idea exchange, defense and communications. Our goals are to add families as there is strength in numbers. Respondents must be self motivated, trustworthy and stable. We believe in the Constitution.

ASG 0213

Northeast Carolina/Norfolk, Virginia Area. White family of four wish to form a survivalist, friendship network with others of same background and attitude. Wish to exchange information, ideas and possible participation in survival and related activities. I believe in defending family and property. Please no gays, drugies, alcoholics, fanatics or criminals need write. Low profile, confidentiality expected and assured. Will try to answer all serious letters.

ASG 0214

Oakland, New Jersey. I am an ex-Army soldier trained in medical and combat fields. I seek families interested in survival. Having a family of my own, I am looking to form a group or join one. I have my own food, supplies, weapons and training. Want to belong to a group for mutual support.

ASG 0215

USA. Male writer seeks information on herbal and home abortion techniques. All replies kept in strict and total confidence. Pro-lifers, clinic bombers, don't waste your stamps.

ASG 0216

USA/World. Bible believing pastor/Bible teacher, 10 year experience, wants to relocate with like-minded believers. Also have BSAE and am master carpenter. IQ 140+.

ASG 0217

Northern Virginia, Washington. 25-year-old ex-military white male. Post tribulation survivalist Christian. I want to share opinions with other Christian survivalists. Will answer all regardless of race, religion, sexual preference or age.

ASG 0218

St. Catherine, Jamaica. I am the leader of a paramilitary group of about 15 male and female members with ages ranging from 16 to 20 years old. Need overseas contacts, ex-Marines, Special Forces, or anyone with advanced military training that is willing to correspond and if necessary, travel to aid us in whatever way they can.

ASG 0219

London, Ontario Canada. I am a white Anglo Saxon male in my early 20s with the Canadian Armed Forces whose interests include weapons, explosives, survival and staying fit. I would like to meet an American female with some of these interests. All letters answered.

Address response letter as follows:

American Survival Guide

ASG 0000 (Code Number, As Above)

2145 West La Palma Avenue

Anaheim, CA 92801

Your letters will be forwarded to persons listed within two days of receipt. *American Survival Guide* accepts no responsibility for results of these communications or for loss or delay of letters. Contact letters that do not carry the appropriate code number will be discarded.

Those who wish to be added to the directory listing, please send names and addresses to *American Survival Guide*, 2145 West La Palma Avenue, Anaheim, CA 92801. The listing is free. •

This fire is out.



Or is it?



...driving, Dave slowed
own even more till were
continued on page 34

...ing through these hills, see,
the air was as clean and as
rain stream, and the sun
...s thundering through
the fir and birch
...ad, turning
...vers and
...rusted



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Cold Weather Comfort

(Continued from page 47)



Build a fire in front of the lean-to and stay cozy during mildly cold weather.

harder to pump into the extremities. Its bad enough that the body automatically shuts down blood vessels near the skin and saves the heat for the core. Dehydration will further reduce circulation and blood volume to oxygen-starved cells.

If you happen to be at higher altitudes where altitude sickness is a problem, you may have to force yourself to drink enough liquids. If your urine is dark yellow, you need to drink a lot more. When you drink that cup of hot chocolate, you may be actually needing quarts of liquid.

What don't you want to put into the body? Both alcohol and cigarettes cause constriction of the blood vessels in your extremities — exactly the opposite you want to have happen to stay warm. Also, alcohol depresses your system and makes it more difficult to shiver. Avoid taking tranquilizers or sleeping pills for the same reason.

Improvised Shelter — Even with the latest and most expensive winter clothing there comes a time when shelter is the only thing that will save you. Blizzard conditions, extreme cold, and long durations in cold environments demand an adequate shelter. For relatively mild conditions, you can construct a simple lean-to using a poncho, space blanket and some nylon line. Tape the space blanket to one side of the poncho and then erect the poncho lean-to between two trees using your nylon line. Stake out the bottom for

a tight, flap-free set up. A small fire in front will radiate heat toward you, and the space blanket will bounce it back, increasing the effect.

If wind is a problem, try finding a hollow log or a deadfall and huddle inside or underneath where you may find a pocket of air surrounded by snow.

Snow caves generally require lots of snow and energy to build. Even if there are only a few inches of snow on the ground you can construct a snow cave. What you do is form a mold using pine boughs. Form a pile of boughs about three feet high and then throw snow on top of the pile a good eight to ten inches thick. Once this snow has set for two to three hours you can pull the branches out and crawl inside. If you throw a tarp or a blanket over the branches first, before piling on the snow, the boughs will come out quite easily.

Staying warm and comfortable in the winter isn't really that difficult. Get the right clothing and enough of it. Watch your body for signs of chilling. If you feel cold, either put on more clothing or get active. Have a positive mental attitude. The more time you spend thinking about how cold and miserable you are, the colder and more miserable you'll be. Acclimate yourself. Over a period of time you can get used to almost anything. Start out with small winter trips to test out gear and new techniques, then later you'll be able to handle multi-day treks on up to full blown winter expeditions! ●

Luby's Cafeteria

The following letter was clipped from the local paper by an ASG reader in Framingham, Massachusetts.

My daughter made an interesting observation about the massacre of 22 people at Luby's cafeteria in Killeen, Texas. "You know," she said, "if only one of those people at the cafeteria had a gun, almost all of those killings could have been avoided." I did a double-take as the truth of what she said sank in. Of course. One person, armed with a handgun and well-trained in target shooting, could have stopped the rampage cold. Our rights to keep and bear arms have slowly been eroded to such an extent that it never occurred to me (and probably not to you), reading about the horrible scene in Texas, that one of our fellow citizens would be armed and prepared to act in defense of self and others. Obviously, our police force cannot possibly protect us from such insane attacks. Everyone has the right to protect his life and the lives of his family and neighbors. In a 1989 survey of 172,355 police officers, 86 percent responded that U.S. citizens should be allowed to have their own rifles, shotguns, and handguns for emergencies, natural or man made. This is one of many situations where it would have made the difference between life and death. If I am ever in a situation like that in Killeen, I hope there is someone well prepared and armed to come to my defense.

Government Party

Government is nothing more than a monopoly of force bestowed on a group of people to keep order — some governments are in power without the sanction from the people whom they rule. All governments are parasites on the people they rule or govern, for governments neither sow, reap or weave. They are wealth consumers. Governments are not buildings, roads or stacks of paper, but people elected and appointed by people. These people, whether military or civilian, are known as personnel. These personnel are not hired but appointed to work for a monopoly and cannot be fired. They cannot strike, they cannot take part in politics, they are wealth consumers, not producers. They are wards of the government, they produce no tax. Tax comes from profits and is confiscated, not donated. The old cliché, "you can't tax the king or his court," is true today. Criminals have invaded and taken over the government. They have confiscated the

gold and silver and returned to us paper and tokens. They rob our savings for our old age and plunder the insurance company with whom they force us to do business.

Glynn E. Nowlin
Claremore, Oklahoma

The Second American Revolution (R2)

The evil of oppressive government has again become intolerable in our land. We must regain our freedoms or lose everything to a greedy and increasingly brutal bureaucracy. Government is out of control at all levels, destroying our rights in its pursuit of power, money, and control. The bureaucracy is a ruling class, immune to the laws and restrictions it imposes on the citizens it is supposed to serve. Examples are everywhere. We are illegally taxed at ever higher rates and our own money is turned against us to regulate and harass us. Our government was far better when taxes were one tenth of what they are today. Public education is an expensive disgrace, a threat to our future that serves only to train brainwashed, "politically correct" incompetents. The "War on Drugs" has become a war on the people, allowing authorities to rob and harass citizens who have nothing to do with drugs. Our monetary system has been manipulated and used by the illegal Federal Reserve company to reap huge profits. Consequently, a loaf of bread which cost a few cents when the Federal Reserve began, now costs a few dollars. This is in spite of enormous increases in productivity in the same time period which should have decreased prices. Because of this the payment on our federal debt is now one of the largest items in the federal budget. Productive, intelligent, industrious Americans are subjugated by government quotas and taxation to support a subclass of welfare parasites. The money taxed for the "poor" is many times the amount needed if it were simply distributed to the needy. Property taxes really mean that the government owns our homes and we only rent them. If you doubt this, stop paying your property tax and see how long it takes them to reclaim "their" house. Even in recession, government

increases spending and raises taxes. PAC controlled politicians fund waste, corruption, pornography, and foreign tyrants and we are forced to pay for it all. Organization R-2 has no official structure and thus is immune to government regulation and meddling. We have no assets, no officers and no members. We are all Nonmembers. What can you do? Join us. Send copies of this bulletin to at least 50 individuals, editors, and organizations. Post copies in public places. Start today! Americans once understood the principles and operation of their government. Be informed and inform others. Fight back!

Anonymous
San Francisco, California

California's Reply

This is the reply I received from the California Attorney General's office in response to the form letter I sent to the governor, Pete Wilson, concerning my militia membership (see ASG, May 1991, page 72).

Mark Nunley
San Luis Obispo, California

RE: State "Unorganized Militia" and the Second Amendment. Dear Mr. Nunley, Your letter to the Governor concerning the above topic, which was received by the Governor's Office on June 11, 1991, has been referred to the Attorney General's Office, as legal counsel to the Governor, for response. Initially, you should be aware that it is the legislature that passes the various gun control laws in this state, and it is their view that most statutes of this kind are appropriate and necessary measures to curb violent crimes; to more effectively protect and support California's law enforcement personnel; and to enhance the safety and peace of our state's citizenry. Accordingly, those legislators that draft such laws do not share the constitutional interpretations set forth in your letter. It is my hope that the following discussion, though it may not persuade you to change your views, will at least clarify the differences between the two constitutional interpretations. Your "declaration of militia membership" is premised on the assumption that the Second Amendment to the U.S. Con-

MAIL CALL

stitution creates or confirms a right of *individuals* to possess and use firearms, and that it imposes limitations upon state governments. Various laws have been passed that counter this central premise, and are based on a different understanding of the purpose and meaning of the Second Amendment. Taken on its face, this Amendment appears to treat the subject of "well-regulated" state militia, and apparently prohibits the federal government from interfering with each state's right to maintain an armed militia. However, individuals in the past have asserted a contrary interpretation, as you are now doing, and on several occasions our state and federal courts have been called upon to determine the true meaning of the Second Amendment. Significantly, such courts of law have consistently reached two conclusions which squarely contradict the interpretations expressed in your letter: (1) The Second Amendment limits only the powers of the federal government, not those of the states; and (2) In any event, the "right to bear arms" under the Second Amendment is not an individual right to possess firearms, but a collective right of the State to maintain a "well-regulated militia." Thus, it has long been settled that regulation of firearms is a proper function for state and local governments. (See, for example, *Galvan v. Superior Court*, supra, 70 Cal.2d 851.) It should also be noted that the Second Amendment permits even federal regulation of firearms, as long as such federal laws do not encroach upon the preservation or efficiency of a well-regulated state militia. (*United States v. Miller* (1939) 307 U.S. 174) For years, state laws have restricted the possession by ordinary citizens of machine guns, cannons, hand grenades, tanks, missile launchers and the like, and no court has stated that such laws are unconstitutional. If the legislature enacted a law which prohibited possession of any form of ordinary firearms, that would be, in my opinion, in conflict with the Second Amendment and the Attorney General would most certainly oppose such a law in court. However, in light of the historical treatment of the Second Amendment by the courts with regard to personal possession of extraordinary weaponry, the Attorney General cannot conclude that such exclusion is unconstitutional on its face. I appreciate your expression of interest in these issues to the Governor, and I hope that the foregoing discussion sufficiently

addresses your concerns. Sincerely, M. David Stirling, Chief Deputy Attorney General.

We would like to know the definition of an "ordinary firearm." And does this mean that semi-automatic firearms are extraordinary weaponry? Only your politician knows for sure. Additionally, we disagree with Chief Deputy Attorney General Stirling and others in government who hold that "...courts of law have consistently reached...conclusions which squarely contradict" the view that the Second Amendment "...confirms a right of individuals to possess and use firearms." Have our courts, particularly the U.S. Supreme Court, definitively and decisively ruled on the Second Amendment's meaning? We don't believe so. And if and when the Supreme Court did so, this will not necessarily guarantee a correct interpretation of the original intent of the framers of the Constitution. In any event, we, and we strongly believe, millions of other Americans, consider responsible possession and use of firearms, including modern military-types and other semiautomatic weapons, to be an inalienable right of free people everywhere. There is a saying: When the people fear the government, that's tyranny; when the government fears the people, that's liberty. This, we believe, is why the founders of this country wanted an armed citizenry, and why corrupt and incompetent politicians today are working with such determination to disarm the public. All this doesn't mean, of course, that we would oppose reasonable laws drafted with the intent of denying irresponsible, criminal or mentally unstable people from possessing and using firearms. But irrational, unjust and extremely harsh anti-firearms-ownership laws such as California's Roberti-Roos Assault Weapons Control Act of 1989 are the epitome of the "collective right" view of the Second Amendment. This law and others similar to it, such as the absurd assault weapon law in New Jersey, are ineffectual in curbing violent crime in our society and severely punish law-abiding citizens —
The editors

100 Percent Survivalist

The ASG September article "100 Percent Survivalist" by Clayton Phillips was an interesting (though short) expose on home survival. However, I do question Mr. Phillips' survival thinking on several matters. If you are trying to be a 100 percent survivalist

"prepared for the worst-case scenario, such as WW III," the article falls far short on the preparations that would be needed. An underground house has many merits, but as a blast or fallout shelter, it is dangerously inadequate. Being 70 miles from a possible target area is a good idea, especially if it means you are not in the general downwind direction. This has a direct bearing on the level and duration of radiation exposure received, as well as determining what, if anything, will be left alive to hunt. Prolonged radiation exposure does kill deer and many other forms of life, besides humans. Firewood can be contaminated by fallout and should be covered with disposable tarps. Otherwise you will contaminate your living quarters and, as the wood is burned, you will reintroduce the fallout into the atmosphere. Also, treated lumber/chips should never be burned because toxic gas is a by-product. Lastly, wells, especially shallow ones, can easily be contaminated. I would give hard thought before I bury anything, including 1,000 gallon diesel tanks. This would help "see to it that you do not get sick."

Harry Drew
Port Orford, Oregon

Computer Bulletin Boards

I just read "Computer Bulletin Board Systems" in your December 1991 issue. I agree that a BBS is a great tool for survivalists but I must caution your readers that they should never, repeat NEVER reveal their name, address or phone number to anyone via a BBS. I must take exception to the statement, "Verification helps to keep the kooks, hackers and other riff raff from leaving obscene messages or causing problems on the system." It does not! Verified users can leave obscene messages, etc. All it does is leave a trail right to your door. If you have managed to keep your survivalist actions low profile so far, why risk it? You do not know who may obtain this information. Thieves looking for their next victim or Big Brother collecting information are just two of the potential dangers. Another word of caution — be careful what you say on a BBS. If you think this is a place for free speech you are wrong. If a SYSOP does not agree with your message, it can magically disappear. Find a BBS that does not require your name, etc. Download info and keep a low profile.

Anonymous
Coos Bay, Oregon ●

China Sports, Inc.:

Norinco 1911A1 Pistol

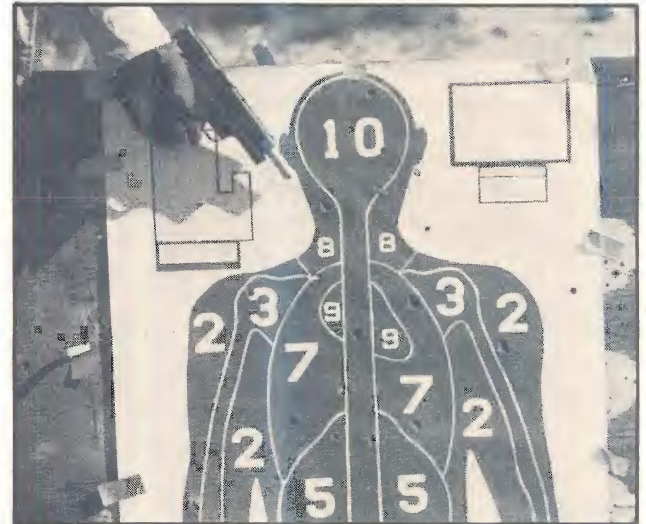
By Jim Benson

Improved, well made Chinese copy of the venerable .45 ACP caliber U.S. service pistol. . .

Norinco's new 1911A1 gave excellent performance with several types of ammunition, proving to be very reliable and accurate.



The pistol is a faithful copy of the venerable U.S. service pistol.



Results of fast aimed fire from 10 yards with different types of ammunition.



Field stripped to basic components.

THE Model 1911A1 .45 ACP semi-automatic pistol, the standard U.S. military sidearm for most of this century, is one of the most successful and popular handguns of all time.

It has been manufactured by many different firms in this country and in numerous other countries. And though today's common double-action semiautomatic handguns have displaced it to a considerable extent as a military and law enforcement weapon, the 1911A1, with its big, powerful round, remains in service with some agencies and military personnel in the U.S. and around the world and is still immensely

popular with civilians as well.

Copies have been produced by the People's Republic of China for decades but a new and improved model has just been introduced (1991) in the U.S. from the PRC, imported by China Sports, Inc., which markets the products of the giant PRC arms maker Norinco.

This new model of the 1911A1 is a faithful copy of the original service pistol, with a few minor changes, and is made of high quality parts.

The frame, slide, barrel and other major parts are all milled from forged steel. The other metal parts are either machined or investment cast steel. The

gun has a blue finish with brown checkered plastic grip panels. All parts are military specification and interchangeable with other 1911A1s.

This pistol has been partially throatened so it will accept hollow point rounds. In fact it is designed to fire most common commercial .45 ACP loads.

The fixed sights differ only slightly from the original military sights. The front blade and rear square notch (drift adjustable) have white dots to aid in low light sighting.

Specifications are the same as other 1911A1s. Weight empty is 39 ounces. Height is about 5.5 inches. Barrel is



The sights on the Norinco gun have white dots for low light sighting aids.



The trigger is serrated for better firing control.



Brown checkered plastic grip panels are the only non-steel parts of this pistol.



5 inches long with standard .45 rifling of 6 grooves and a left-hand barrel twist of one turn in 16 inches. Overall length is 8.5 inches and width is about 1.25 inches. The trigger is serrated for better control with the trigger finger. Trigger pull is a crisp 5-6 pounds; not bad at all for a gun of this type out of the box.

I test fired this gun at first with some CCI Blazer 185-grain jacketed hollow point ammunition at CSI's indoor firing range in Ontario, California. Firing from about 15 yards I had a very tight group on the target. The gun shot a tad high but other wise was

right on the money.

Later, at our favorite public shooting area in the nearby mountains, we shot this pistol with some of the new Norinco 230-grain, non-corrosive, reloadable full metal jacketed .45 ACP ammunition being imported by CSI and the gun also performed superbly. No malfunctions of any type were experienced during test firing, and the Norinco 1911A1 proved just as accurate and reliable as during the first shooting session. We later tried some Remington and Winchester loadings, including hollow points, in the Norinco 1911A1 and got the same excellent per-

formance. The new Norinco ammo is just as good as any of the other 230-grain military ball ammo I've shot in this or other 1911A1s over the years, and it is competitively priced as well.

With a suggested retail price of about \$399, Norinco's new 1911A1 pistol is a good buy. You could easily spend as much or more for another brand of this type of pistol and not get nearly as good performance or accuracy.

The new Norinco 1911A1 is available, or will be soon, through dealers nationwide. For more information, contact China Sports, Inc., Dept. ASG, P.O. Box 3250, Ontario, CA 91761. ●

Comprehensive Adventure Medical Kit

Designed by an expert to meet the needs of the wilderness or foreign traveler...

ADVENTURE Medical Kits from AARDVARK Enterprises were developed to help you prepare for and manage medical emergencies when professional medical care is unavailable.

Adventure Medical Kits were designed by Eric A. Weiss, M.D. As a physician trained in emergency and wilderness medicine, Dr. Weiss was often consulted by expeditions and travelers on items to include in their first aid kits.

Shown here is the Comprehensive Adventure Medical Kit, the top-of-the-line of these kits.

It is intended by AARDVARK as "the most comprehensive and carefully thought out first aid kit commercially available." It is designed "for travelers to wilderness areas or Third World countries" where you are from professional medical care for extended periods. "Trekking in Asia, rafting the Grand Canyon, or canoeing the Boundary Waters in Canada are just a few of the adventures where the Comprehensive Kit is your ideal companion."

The kit includes an owners manual with directions for using the components of the kit, recommended prescription medicines and immunizations for travelers, information on dental emergencies.

There are various wound management items: A Sam Splint (lightweight, foam padded aluminum splint for almost any part of the body). A hypothermia thermometer. Sawyer Extractor snake bite treatment kit. Oral rehydration salts recommended by the WHO for replacing electrolytes in diarrheal illness, heat exhaustion and dehydration. A wide assortment of medications for treatment of indigestion, diarrhea, allergic reactions, fever, pain, colds, nasal congestion, burns, bacterial and fungal infections. Potable Aqua iodine tablets for disinfecting drinking water. And *The Pocket Doctor*, an invaluable handbook on first aid topics and health care concerns.

The Comprehensive Kit is about \$115 retail. It weighs only 2 pounds, 10



The Comprehensive Adventure Medical Kit is small and light, weighing less than 3 pounds.



Snake bite kit, oral rehydration salts and skin coverings are just a few of the items contained in this section of the kit.



One section of the kit's contents includes a pair of disposable gloves, first aid reference materials, a SAM splint and other items.



A wide range of bandages are included in the kit.

ounces and measures approximately 6 inches wide by 12 inches long by 6½ inches high. It's contained in a strong blue nylon zippered bag with carry handles.

Other Adventure Medical Kits available from AARDVARK are the Backcountry (about \$80), a smaller, lighter model of the Comprehensive; the Fundamentals Kit (about \$50), designed

for short excursions such as a weekend backpack or canoe trip; DayTripper (about \$30), compact and lighter than the Fundamentals Kit with enough extra room to customize to your specifications; and a new one called the Optimist Kit (about \$10) for minor excursions or quick, short trips. For more information contact AARDVARK Enterprises, Dept. ASG, 2028 E. Villa Ave., Ste. B, Pasadena, CA 91107; phone (818) 578-0957 or (818) 577-0671. ●

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1991 Giveaway No. 2:

Steel Worker Wins D Max 10 MM Carbine

*Blackjack Combat Kukri,
Spyderco Clipit knives
also given away. . .*



Staff Report

A 34-year-old steel worker from Blue Island, Illinois, was the top prize winner in ASG's 1991 Giveaway No. 2 Contest.

Anthony Hamm was the recipient of a D Max 10 millimeter semiautomatic carbine.

David Collinge of Wolfboro, New Hampshire, was the winner of Prize No. 2, a Blackjack Knives Combat Kukri.

Gary Wilson, 35, a warehouseman from Hampton, Virginia, won Prize No. 3, a selection of four Spyderco Clipit locking folding knives.

Winners of ASG's 1991 Giveaway No. 3 contest have been drawn and will be announced in an upcoming issue.

See pages 52, 53 of this issue for details about ASG's 1992 Giveaway No. 1 Contest. •

The Eternal Warrior

And the keys to life long
self defense (See Article this issue).

John McSweeney is a 7th degree black belt in the International Kenpo Karate Assn. He is the founder of Karate in Ireland and presently teaches at his school in Elmhurst IL.



* A strong healthy body * Knockout hitting power
* Skill in modern weaponry

John McSweeney gives you these keys in his series of exercise & self-defense videotapes.

TIGER MOVES: This exercise tape enables you to develop a powerful, muscular physique and to maintain a healthy body by working out only ten minutes a day using internal forces of the body.

UNARMED SELF-DEFENSE: (Tapes 1 & 2) These unarmed tapes teach you the most effective self-defense techniques against every type of attack. Learn to hit vital points with power that stops an aggressor instantly!

ARMED SELF-DEFENSE: This armed tape develops proficiency with gun, knife, club, and yowara stick. Handgun combat shooting employs a proven method which guarantees accuracy in firing.

POWER STRIKES: Power Strikes covers nine specific strikes which are far more effective than any boxer's punch or 'sport karate' strike. Vital targets are also covered as well as methods of developing knockout power to stop an aggressor instantly!

BATTLEAXE, A Warrior's Tale: By John McSweeney, is an autobiographical instructional book detailing eighteen actual self-defense encounters. \$9.95

Tiger Moves	(30 Min)	\$19.99
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sea cliffs and mountain sides. Landslides frequently begin with the slumping of material high on the slope and then move down and out along a definite curved plane. Although landslides are usually less dramatic than other types of mass wasting, the direct costs are widespread and increasing as our population increases.

A 1973 study by the Federal Highway Administration estimated annual repair costs for landslide damage to federal highways at \$50 million. A decade later, during the winter and spring of 1982-1983, landslide damage to the California state road system came to \$166 million.

The costs of landslides to the environment are also high. Much of the land that slides is, by definition, the nutrient rich top soil. When this layer is lost, crops grown on the same slopes will grow less vigorously or not at all. Slopes which have suffered landslides are also subject to recurring erosion which can lead to deterioration of stream quality as the result of sedimentation.

Even without man's intervention landslides occur in nature. But in undisturbed areas they are rare because of the plants that grow on the slopes. Most landslides are caused by water or erosional factors such as wind, heat and cold that disturb or alter the slope's angle of repose (naturally stable angle). The bare soil, as we said earlier, consists of grains fitted together much like the pieces of a jigsaw puzzle. When something disturbs the fit, the soil is loosened and gravity leads it to slide down hill.

Water is one of the most common disrupters of the soil's cohesion, but when plants cover the slopes, then their roots help to hold the soil physically in place and, more importantly, drink up the excess moisture that threatens the cohesion. The water is then transported through the plant along with mineral nutrients derived from the soil to feed the plant and the excess moisture transpires through the plant's leaves into the atmosphere. When a fire ravages a forest to lay bare the land, the roots help to maintain the soil in place for five or six years. As new plants grow in the mineral-enriched soil that remains after the fire, their roots grow to replace those of the burned trees and shrubs. Because the plants destroyed by the

wild fires are replaced by other plants, most likely the offspring of the originals, the stability of the slope is maintained.

When timber is harvested or mines are opened, however, the stability of the slopes is often affected because heavy equipment disturbs the site (most dramatically when roads are cut into the mountains), soil nutrients are not replaced and new plant species are introduced. During the time between clear cutting and reforestation, the slopes are denuded. More rain hits the earth harder and more directly than when trees sheltered the earth. The water saturates the ground because the tree roots that drank up the excess are no longer there, and in the winter the snow cover is more direct, leading to a greater volume and speed of snow-melt in the spring.

Even without man's intervention, landslides occur in nature

Although the slides that are frequent in timberlands may seem an extreme example, they are actually fairly representative of the process that leads to landslides: plants that provided the important function of evapotranspiration are removed and the soil's angle of repose is disturbed by road cuts and the movement of heavy machinery. The same disruptive activities also characterize road building and housing development, activities which are even more destructive to the stability of the slope because vegetation is replaced by buildings and pavement, neither of which absorb water and both of which increase run-off and soil saturation. The fact that the best level sites in urban areas are already developed means that builders are now working on steeper, less stable slopes that are more likely to slide. In Southern California, 25 to 30 percent of major landslides result from construction.

Before building on any slope, you need to determine the slope's stability and what factors maintain its angle of repose. Clay soils, for example, are particularly likely to slide. Before building — or settling on a building site

— you should consult with local zoning officials or engineers who have access to environmental geology maps that indicate areas of potentially unstable slopes. In rural areas it's best to consult with an engineering geologist who can advise you on the soil type on the surface as well as the underlying rock strata.

If a danger of slides does exist, you may need to install a drainage system in the slope to carry excess water away from the slip surface. Such systems are difficult and expensive to install. Alternatively, you might want to build a retaining wall to prevent a slope's descending on to a cleared area. To build in some areas, you may need to drive pilings to bedrock in order to provide a solid footing for your building.

At best, leave trees and brush in place if you're building on a hillside. If the slopes have already been cleared, you must carefully consider the nature of the slope before deciding on the best way of stabilizing it.

The first thing you must determine is whether the slide surface is shallow or deep. If it is shallow, then you can begin by planting native grasses, which will protect the soil from the infiltration of water from rain, grow roots to wick excess water from the slope and begin building the network of roots that helps tie the particles of soil together.

Once the grasses are established, plant herbs and shrubs. If your slope is very steep — more than 45 degrees — do not plant trees until the shrubs and bushes are well established. Choose plants that do not need to be irrigated since adding moisture to your hillside will only increase the probability of a landslide. Instead, choose deciduous trees such as oaks, which consume more water than evergreens and grow more slowly so that they do not overburden the fragile hillside. One tree to avoid is the spruce, which is known for its rapid growth and shallow root system.

In areas frequently threatened by wildfires, such as Southern California, you'll also want to choose drought and fire resistant species. In the West some good choices are Pacific red elder, snowbrush and huckleberry. The slopes will achieve their greatest stability when they are forested, but you must balance the advantages of stability against the danger of forest fires.

When growing a forest is not appropriate, you may choose to stabilize your slopes mechanically. One of your first steps would be to provide drainage so that excess water can be removed. If clay overlies sand, gravel or another permeable surface, you can drive perforated pipes horizontally through the clay into the sand or gravel. The drains will be most effective if they slope down from the horizontal. Eventually, however, drains do become blocked and must be bored out to restore their effectiveness.

Retaining Walls — Retaining walls are another means of controlling an unstable slope and controlling existing landslides. At their simplest, these require heavy manual labor and rip-rap to stop the slide. More formally, low walls of concrete, block or, in cases where a supply of inexpensive timber is plentiful, wood may be built to stop an active slide. Control is best with drainage behind and under the wall and when the wall is massive: the rip-rap wall of massive boulders which takes up a lot of space is usually more effective than a concrete wall. In any case, low, thick walls that lean back into the slope are more effective than tall, thin vertical ones.

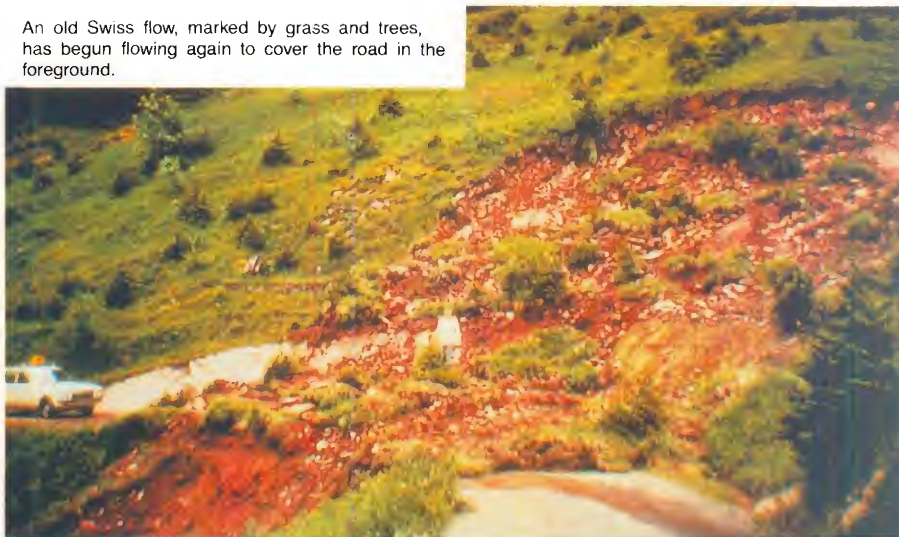
In rocky slopes, rock bolts and rock anchors can be driven into the deteriorating rock face to hold it in position. Bolts and anchors work by compressing the stone so that tension holds it together.

Another alternative in impermeable soil is hardening. The first method is electro-osmosis, a method of draining the soil by creating an electrical field by placing two electrodes in the soil, setting up a potential difference and causing the water in the soil to migrate to the cathode, a perforated pipe which is then drained by pumping out the water.

In shallow landslides in stiff materials characterized by surface cracks, grouting the cracks by filling them with portland cement can be effective. The grouting displaces the water in the cracks, and then, as it hardens, provides a solid skeleton that stabilizes the soil.

A related method is to bore into the slope with an auger to the slippery soil beneath and mix lime into the auger hole. The lime mixes with the clay and stabilizes the soil in the bore holes, creating solid columns in the slope. The slope must, however, rest for sixty days before it is stable enough to withstand loading.

An old Swiss flow, marked by grass and trees, has begun flowing again to cover the road in the foreground.

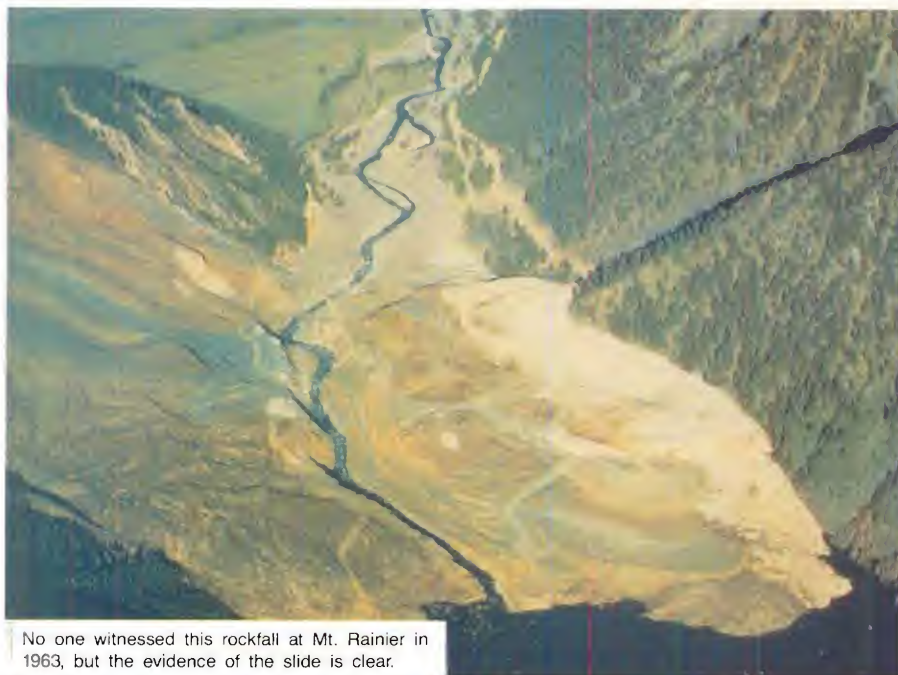


Results of an early 1970s mudflow in Death Valley.

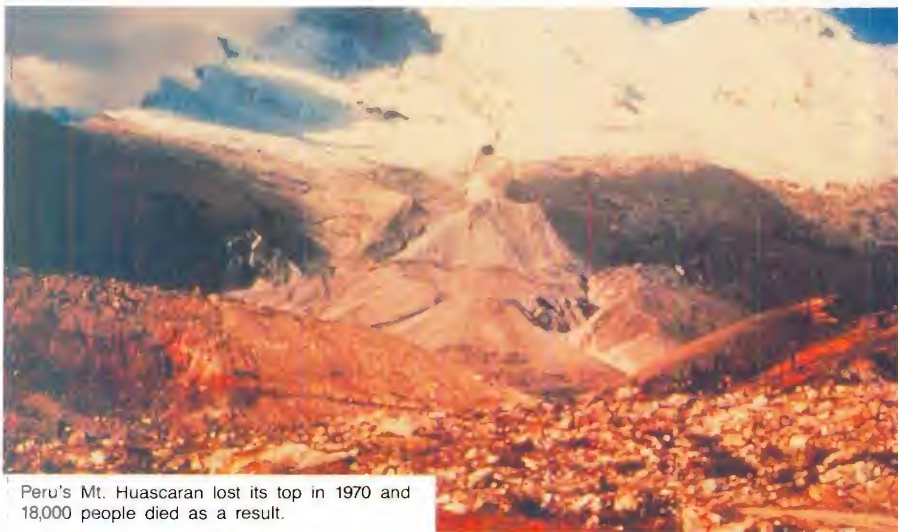
The still active Slumgullian mudflow in the San Juan Mountains of Colorado.



Landslides (Continued on page 77)



No one witnessed this rockfall at Mt. Rainier in 1963, but the evidence of the slide is clear.



Peru's Mt. Huascarán lost its top in 1970 and 18,000 people died as a result.



The Hebgen Lake earthquake in Montana caused a slide that deposited a 200 to 400 foot thick barrier across the floor of the canyon.

While many of these techniques require heavy equipment that may not be available or affordable, the old practice of terracing a slope can be accomplished with hand tools and family labor. Another advantage to building terraces is that the flat surfaces provide areas suitable for gardening. An appropriate choice of plants (those not requiring irrigation) can increase stability while beautifying the slope and providing food for the family. If you are terracing slopes above your home site, you will probably also want to provide drainage away from the house.

Although our increasing knowledge about the earth means that we can better plan the ways we disturb the landscape, our understanding is still incomplete.

In southwest Washington in the winter of 1989-1990, a part of K-M Mountain slid onto State Route 4, an east-west highway linking the I-5 corridor to the Pacific Coast.

At last report after more than a year and a half of work, less than 10 percent of the work had been completed and the detour around the slide turned a two lane highway into a tortuous track that spurs residents with passenger cars to choose detours on the other side of the Columbia River in Oregon or skip the trip altogether.

Rumor has it the repairs have been abandoned, that the slide has defeated the efforts of the highway department and that the detour will be maintained as the route over the mountain. The repair was originally scheduled to be completed over the course of five years. Certainly the technology is here to restore the road. But the question the state must ask — as you must ask yourself when dealing with an unstable slope — is it worth the effort?

K-M Mountain is about an hour west of Mt. St. Helens, about an hour east of recent earthquakes on the Oregon coast. But its slide has nothing to do with volcanoes or earthquakes. The top of K-M Mountain slid because of the soil, slope and moisture — the common causes of landslides.

The slide on K-M Mountain is a little slide, but for those who live near it and have experienced its disruption, the thought of a slide looms as a larger threat to their homes and families when they look at the surrounding hillsides.

And anyone who considers how man's activities are changing the natural stability of slopes will have reason to consider carefully before building on or near sloping land. ●

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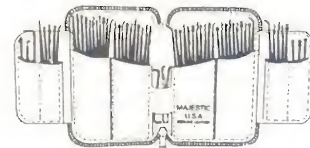
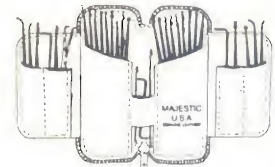


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